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ABSTRACT

A canoe camping trip offers an exciting, inexpensive vacation from the usual daily routine and environment, and develops resourcefulness, cooperation, and camaraderie among participants. Chapter 1 of this guide discusses preliminary planning of a canoe trip, including decisions on the length and type of trip, designation of a leader for large groups, and checking the itinerary with maps and forestry officials. Chapters 2 and 3 describe types of canoe trips, uninhabited lands for experienced canoers, canoe and paddle design, and paddling techniques and strokes used in a variety of situations. Chapters 4 and 5 discuss equipment and supplies, suggest menus, and present detailed lists of general camp gear, personal gear, and food for a one-week trip by four or five adults. The final four chapters include (1) proper methods of canoe traveling, portaging, and making camp; (2) how to negotiate rough water; (3) navigation with maps and compass; (4) preparation of a safe campfire site; and (5) a variety of safety tips and helpful hints. This book contains 24 references. (SV)

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by D. Bruce Johnstone

Guide to Canoe Camping

A comprehensive planning guide for canoe trip leaders

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by
D. Bruce Johnstone

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Preface

To one who has canoed and camped on any river or series of lakes in uninhabited or sparsely settled country, there is no need to extoll the pleasures and values that are experienced. For those who have not yet done so, their first trip probably will convince them unforgettably of the unique excitement of woods and waters, campfires and sleeping bags—away from their usual day-to-day routine and environment.

Most of us spend the greater portion of our lives in or near urban areas, at desks, benches, or in classrooms surrounded by cement and asphalt, noisy traffic, harassed by telephones or daily schedules. Elevators, supermarkets, parking lots, fast-food restaurants, crowded sidewalks, and highways are all a necessary part of modern living. Few of us would consider giving up such modern conveniences and luxuries as our centrally heated and air-conditioned houses, electric appliances, modern plumbing, telephones, and TV sets. But, for a few days or weeks a year, the complete change to roughing it in untraveled rivers or lakes with canoe, pack, tent, a few basic tools, and simple food can be as therapeutic as it is stimulating and fun. A bit of leisurely after supper fishing when the dishes and chores are done, conversation and laughter around the evening campfire, a display of Northern Lights or the brilliant view of familiar stars and constellations are but small fragments of the total experience.

The absence of urban noise and crowds, the open fields or the green forest, clear waters, clean, crisp air, the murmur of wind through trees all act as a tonic to almost everyone with normal sensory functions. The exhilaration of paddling through quiet and sparsely inhabited waterways, of making camp, of cooking simple meals over a campfire, and sleeping in a tent is exercise for the body, solace for the spirit, and relaxation for the mind. The experience seems to humanize people. I have never met an unfriendly person on a canoe trip, and seldom encountered anyone who was not helpful and generous in any situation. True, the men and youths I usually have canoed with are urbane and friendly at home, at school, or in church. But on the trail and in the camp, they all somehow take on a new luster of cooperation, camaraderie, and thoughtfulness.

There is no better way to develop resourcefulness and the quality of getting along cooperatively with one's fellow human beings than on a canoe camping trip.

A canoe camping trip is also relatively inexpensive. Most of the appropriate food can be purchased at grocery stores or supermarkets as will be explained later, and it is far cheaper than the freeze-dried, specially prepared food that is packaged for backpackers and sold through outfitters and camping specialty outlets. Modern equipment now available—lightweight aluminum or fiberglass canoes, nylon tents and tarps, warm yet lightweight sleeping bags, and easily prepared concentrated foods makes camping far easier and more comfortable than it was a few years ago. The purchase of practically all of the equipment is a one-time investment that will last for many years.

The daily exercise of paddling, portaging, and making camp, the unpolluted fresh air and open sunshine make the simple campfire food taste delicious, and a night's rest in a sleeping bag is totally relaxing. Getting physically tired and really hungry by the end of the day can make supper and the evening's rest truly rewarding.

For youngsters or teenagers from urban backgrounds, a canoe-camping experience in any wilderness or partly wild area will teach them invaluable lessons they cannot get in any classroom.

Most of my own canoeing and camping has been in the North Country of Minnesota, Wisconsin, and adjacent Canada; but it can be equally satisfying in any of the sparsely settled navigable rivers, lakes, reservoirs, or parks in the East, Midwest, Far West, or Deep South.

Acknowledgements

This little booklet is dedicated first to my wife, Florence, who has canoed with me alone and with our now grown children and their children over many miles of lakes and rivers. She has helped tremendously throughout preparation of the manuscript by editing, correcting, and typing each page and chapter. Secondly, I am deeply grateful to my longtime canoeing companions who have given me such deep friendship and camaraderie on many waterways and in countless campsites: John Ledbetter, Everett Cowle, Tom Story, Howard Schuler, Ted Rix, Sam Goad, Howard Kaerwer, Don Williams, and Woody Brindle. These special friends, most of them younger than I, have put up with my campfire cooking, laughed at my limericks, coped with my now slower pace, and indirectly inspired me to write this little book so that others could share the joys of canoeing and camping with true friends. I am grateful, also, for the suggestions and editing of this manuscript by three good outdoorsmen: Peter Higgins, Lucian Brown, and my son, David Johnstone.

1
Planning

Any trip needs careful planning: the route to be traveled, the needed food and equipment, and preparation so that the necessary supplies are included and excessive or duplicated items are omitted. A long trip with a large party requires a bit more preparation and planning than a short one with just a few people. Two or three people with one canoe can easily and safely take short trips into areas close to access points and cope with any likely emergency. On long trips into more remote wilderness areas and where whitewater travel or large lakes may be encountered, a minimum party of two or more canoes and four or five persons is advisable and helps to insure a safer and better experience.

On a week to ten-day trip involving several persons and canoes, a third member can fit very well, along with the necessary food and gear, into one or two of the larger canoes. In fact, if the party goes reasonably light, a third person in any of the canoes can make the necessary portaging and camp duties easier.

Dates and duration of the trip, of course, have to be acceptable to all members of the party. A larger group requires more careful planning, while less planning is needed for a short trip with a smaller party. Five to seven days in any wilderness area is about minimum; a week to ten days is even better. June, in many areas, offers good weather and fishing, but usually more black flies, mosquitoes, or other insect pests, and may be more rainy than in mid to late summer. For many campers, July and August are favorite times with chances for better weather, fair fishing possibilities, and ripe, edible berries growing wild in many areas. September and much of October bring crisp and mostly clear weather, frequently better fishing, no insect pests, and few other campers.

One adult or experienced older youth should be designated as the leader on any sizeable trip and given the responsibility for organizing the itinerary, the gear, food, maps, permits, and other details. A careful checklist should be made to assure that all general equipment is included without duplication, and that each camper brings his own needed personal gear, keeping it to a minimum. Frequently,

though not necessarily, the leader is also the camp cook. Whoever has this assignment should prepare, with help from the others, all the meals for the duration of the trip. In any event, the person responsible for the cooking should plan, procure, bag, label, and pack the food to coordinate with the logistics of supply, accessibility, and reasonably good meals.

The leader, or someone delegated to do so, should check the itinerary with maps and knowledgeable forestry or park officials as to the navigability of the route according to such things as age and experience of the group and permits required. In planning a route with maps, watch for the "R" marks (rapids) and the "P" marks (portage). They can delay travel and thus require more care and time. Large lakes or bodies of water can become too rough to travel safely at times and necessitate shorebound delays. A map measurer (available in map stores) can give a fair estimate of mileage over an irregular route. Planning too long or arduous a trip for beginners can take the fun out of an otherwise pleasant vacation.

Canoe country map showing portages, rapids, etc.

In arranging the needed cars for transportation to a distant canoeing area, considerable stowage space is needed for canoes, gear, food, and the people involved. Although heavier packs and gear should go in the trunk or inside the car, space can be saved by tying the lighter packs containing such items as sleeping bags and clothing under the overturned canoes on top of the cars.

Cartop carriers suitable for canoes come in many designs. Most are built to carry a single canoe turned bottom up, but they can be designed to carry two canoes by bolting two-by-two-inch cross pieces to the frames, thus making them wide enough to accommodate a second canoe. By careful placing and roping and tying securely, a third canoe can be carried, centrally balanced, above the lower two. Be sure the canoes are lashed firmly to the car before starting the trip, not only across the center, but at both ends as well. After driving a few miles, and again periodically throughout

the driving time, check the ropes to be sure they are firm and there is no danger of the canoes sliding off the carrier.

Decide on Length, Type of Trip

A week to ten-day trip can involve a move every day or so to cover a length of river or many lakes within a wide area; or it can be such that a permanent camp is made on one campsite for most of the duration of the trip. Each plan has its advantages, but the decision as to which type should be made and agreed upon by all before the start. Moving each day allows the party to see more river or lake country but does involve more time and work. Staying most of the time in one campsite is less strenuous and affords more time to relax, fish, swim, study nature, and explore the nearby area without making and breaking camp each day.

On a wilderness trip with inexperienced persons or with young people such as Scouts, Camp Fire or 4-H groups, there should be several experienced adults (one for every four or five youngsters) for supervision and safety precautions. The young people should be strong swimmers and should have had some preliminary training in canoe handling. If no experienced adults are available to the party, professional guides may be hired for the trip, and usually are available through the outfitters or resorts in most wilderness or park areas. They act as guides and usually do the cooking and much of the heavier work on portages and in making camp.

In some areas, such as the Boundary Waters Canoe Area (BWCA) of Minnesota, ten persons per campsite at one time are the maximum allowed. Because only established campsites may be used, and frequently they are miles apart, this regulation must be considered in organizing the trip.

"Going light" means keeping gear, clothing, and food to a comfortable minimum, and, on any extended trip of a week or more, makes the portaging, camping, and canoeing easier and more enjoyable.

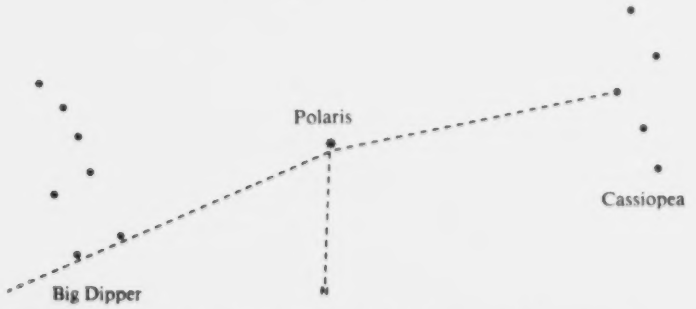
When planning the itinerary for a trip involving several lakes and considerable distance (whether lakes or rivers) one should keep in mind that fifteen to twenty miles per day—more or less, depending on river current, portages, and weather—is a good average day's run. It should be realized that high winds and waves or bad weather sometimes can keep the party completely shorebound for a day or two. Even under ideal traveling conditions, it is wise to allow one or two days a week to stay in camp, relax, do some washing of clothes or just leisurely fish, swim, and enjoy some outdoor games and nature lore. River travel where weather might not be a major factor can be delayed or slowed by fallen trees or low water level.

Purchase Maps and Compass

Maps of the canoe areas usually are available not only from companies but from most outfitters selling or renting canoe and camping equipment. Most of these maps show scale (miles per inch) and the better ones show topography (by contours), rapids, portages, entry points, ranger stations; those covering park areas frequently indicate available campsites. Some maps also show length of portages (rods = 16½' in U.S., chains = 66' in Canada), and show the elevation of the larger lakes so the direction of flowage of connecting rivers and streams can be ascertained. Good maps also indicate declination or compass error as well.

A compass needle points to the far north magnetic field which lies on southern Bathhurst Island in the Canadian Arctic Archipelago, *not* the North Pole. This area is roughly on the 100th meridian west at about 76" north latitude. The compass needle would then point true north only along that meridian—western Manitoba, central North and South Dakota, Nebraska, and Kansas. Compass reading to the east of this line will have a westerly variation or error, and readings taken west of this line an eastern variation. The farther west or east and the farther north, the greater the variation. East of this meridian, the compass needle points west of true north, and west of that meridian it points east of true north. The declination indicates the degrees east or west of true north the compass needle points, and must always be considered in arriving at exact directions.

On any trip, find Polaris, the North Star, on the first clear night and check your bearing and compass with it, as it is within a degree or two of indicating true north. Every camper should be taught to locate the North Star, and any true woodsman can find it immediately on any clear night in the Northern Hemisphere. The Big Dipper rotates around Polaris, its handle pointing to a very bright star, Arcturis; the outer rim of the cup of the Dipper (two stars) points right to Polaris, with the "W" shaped Cassiopea constellation pointing toward it from the opposite side.



Finding Polaris (North Star) from Big Dipper and Cassiopea.

II
Trips

There are many types of interesting trips possible with canoes. They can be either easy or strenuous, of long or short duration, taken close to home or a considerable distance away. For beginners or those with little time or inclination for an extended trip, a one-day picnic-type canoe excursion down some nearby river can be great fun. Little preparation or planning is needed—just an accessible, canoeable river, a picnic lunch, drinking water, and an extra car to leave at the coming out place. Two or more cars with campers, canoes, and gear can leave one car at the exit spot, drive with a second or third car to a starting place a few miles upstream with all the people involved, canoes and lunch, drinking water, fishing tackle, or other articles needed, and there launch the canoe. Then picnic, birdwatch, botanize, and leisurely paddle downstream with the current to the waiting car at the exit spot by late afternoon or early evening. The drivers in the party then can drive back to the starting point to retrieve the car or cars while the others stay with the canoes and pack up the gear. The mileage via highway will be surprisingly less than the distance traveled on the river.

Another easily planned short type of outing is a weekend river trip from Friday afternoon or Saturday morning to Sunday afternoon. This kind of trip affords a night or two of actual camping, and requires assembling the necessary food, gear, and equipment needed. A weekend trip like this should be done on a somewhat longer and preferably a more primitive stretch of river than the one-day picnic-type excursion. It is an opportunity to try a small amount of canoeing and camping without long preparation, long-distance driving, or investment in elaborate gear.

Although even a short trip such as this requires much of the usual camping gear (tents, sleeping bags, etc.), the necessary two-day food supply without any portage problems allows the cook to bring fresh, perishable items without the packaging, labeling, and concern for minimum weight that is needed on a long trip. However, many good rivers have occasional rapids, fallen trees, and other obstruc-

tions necessitating a portage or pullover, so it is always safest and easiest to "go light" and be prepared for such situations.

River Conditions Change with Seasons

On spring river trips for a weekend it is likely that water will be higher and faster than in the summer or fall. It is wise to check with a local game warden or park supervisor about river conditions and navigability. Spring and early summer conditions can bring high flood waters to certain rivers, thus rendering canoeing and camping undesirable. If waters are not too high, spring trips on many rivers can be great; the spring wild flowers and bird life are fascinating.

Similar trips in the fall are fully as rewarding but now one must check to be sure the river is not too low. With an absence of bugs, the fall foliage in color, crisp air, and the smell of autumn, fall trips afford excellent canoeing and camping conditions. Fall river trips in many areas can also offer squirrel, grouse, or small game hunting as well as birding, searching for material for dried floral arrangements, or just hiking. Remember that in late fall the days are shorter and the nights are cool, so provide extra blankets, a lantern, and warm clothing.

Possibilities for Trips Are Unlimited

Canoeing and camping are possible anywhere there are navigable, reasonably clean waterways without too many habitations or traffic, and suitable places to camp along the shores are available. Although the amount of wilderness areas and the prevalence of lakes and streams vary from one state to another, just about every region of the United States offers some possibilities for canoeing within reasonable driving distance.

Even in the more populous eastern and central states, through the Mid-America farm country and the deep South, there are rivers, streams, and lakes with occasional tree-lined banks and wooded groves along their shores that are surprisingly wild and scenic. Many man-made reservoirs, lakes, and flowages on several river systems in the Mid-South and the West offer canoeing and camping possibilities that did not exist a few years ago before the dams were constructed. For those who live near or can travel to Canada or Alaska, there are many wilderness rivers and areas suitable for more rugged canoeing and camping.

Aside from rivers that are close by and lakes and park areas that are easily accessible for short trips, there are many true wilderness regions offering opportunities for longer, more rugged trips with varying degrees of challenge for experienced campers. Information and maps of those areas can be obtained through state, Provincial or park authorities, conservation or forestry officials or canoe and

camping associations of each region. For example, a few such wilderness canoe/camping areas and information sources are:

1. Minnesota Boundary Waters Canoe Area (BWCA) in northeast Minnesota. Write: Forest Supervisor, P.O. Box 338, Duluth, MN 55801; or, Minnesota Arrowhead Association, Duluth MN 55801.
2. Quetico Park Wilderness Area, north of Minnesota border, west of Thunder Bay, Ontario. Write: Ministry of Natural Resources, Atikokan, Ontario, Canada.
3. Algonquin Park, east of Ottawa, Ontario.
4. Le Verendrye Park, north of Ottawa, Ontario.
5. Allagash Wilderness Area in Maine. Write: Department of Natural Resources, Bangor, ME.
6. Arctic Barren Lands Wilderness Trips to Northwest Territory (only for very experienced adult canoeists). Write: Northwest Territories Tourist Office, 400 Laurier Avenue, West, Ottawa 4, Ontario, Canada; or, Explorer's Guide, Travel Arctic Northwest Territory, Yellowknife, Canada.

Many canoe campers on a one- to two-week trip take a circular route, or at least one that keeps the party moving every day or so through a number of lakes, rivers, or flowages. This type of trip, of course, means a bit more daily effort and better planning, but it allows the party to see several different lakes and more country. Others, especially if time is limited or the daily paddling and portaging are deterrents, prefer to make a permanent or semi-permanent campsite the first day or two in one spot and remain their until time to start back or move on to the coming out place. This type of trip allows time to make a more comfortable camp, affords leisure time to fish, loaf, and to explore surrounding lakes by portaging only the canoe, fishing gear, and a picnic lunch, and return to the base camp comfortably without the chore of making and breaking camp each day. This type of trip, too, provides the opportunity for a trained leader to teach the campers in an unhurried way a bit more campcraft, woodlore, tree and plant identification and enjoy a few appropriate outdoor games.

Unless they stop the practice in the future, Canadian railroads in many wilderness areas will stop the train to put off canoeists and their gear almost anywhere along the rail route, and pick them up at certain points when flagged down for a return. The railroad line involved must be contacted beforehand through a regional office to make arrangements or obtain a permit. This allows a party to canoe, travel, and camp in wilderness areas that are inaccessible by roads. A trip of this sort necessitates using a map to plan carefully and corresponding with the area forester or Ministry of Natural Resources officials as well as the railroad lines involved.

On several such trips in the general area around the English River, Ignace, and Sioux Lookout, Ontario, we have canoed through miles of beautiful uninhabited country with good fishing and have seen practically no other canoeists. Obviously, for planning such a trip,

reliable maps and other sources of information must indicate navigable rivers or lakes adjacent, or sufficiently close, to the railroad tracks to get canoes and gear from the railroad line to the water.

Still another way of getting quickly and easily into remote wilderness area lakes is to fly in, though it is considerably more expensive, and forbidden in some parks such as BWCA or Quetico. Many resorts and towns in the Canadian canoe and camping areas have bush pilot facilities that will fly a party, their canoes, and gear into some remote wilderness lake and then pick them up at a time and place agreed upon for their return. A few years ago my wife and I planned a trip out of Ignace, Ontario, into a lake chain I was familiar with. Upon arrival at the forestry station, however, we learned of a camping ban covering a fifty-mile radius due to extremely dry conditions and forest fire hazards. We then arranged for the local bush pilot to fly us with our canoe and gear to a beautiful remote lake about seventy-five air miles away and outside the area of the camping ban.

We found a beautiful primitive campsite, saw no other people, watched moose, otters, and other wildlife, had excellent fishing, marveled at the spectacle of the Northern Lights, and were picked up on schedule at the end of a wonderful week.

Uninhabited Lands for Experienced Canoeists

For the very experienced and rugged adult canoeist with ample time and a liberal budget, there are miles of wilderness waterways in Alaska, New Brunswick, Quebec, Ontario, Manitoba, Alberta, British Columbia, and other northern areas that are well away from roads, cities, parks, or habitation.

Similarly, for experienced and mature canoeists only, there is a Canadian Arctic trip in the Barren lands of the Northwest Territories on one of several river systems such as the Dubawnt, Thelon, Back, Kazan, Coppermine, and others. These trips are relatively expensive because of the distance and the necessary transportation and bush pilot costs. They also require three to four weeks' time and very careful planning and preparation months prior to the trip. Most of the country is roadless, uninhabited, largely treeless tundra-hundreds of miles away from any posts or settlements. The summers are short at those latitudes and most of the rivers and lakes are ice free and navigable for canoeing only in July and August. Even with the long twenty-hour days during the brief summer, the rivers and lakes remain too cold for swimming and are hazardous if one dumps or overturns a canoe. Black flies and mosquitoes are a common and persistent problem except on breezy days, but with helmets and insect repellents are not too formidable.

The scenery is unique and beautiful in a wild and barren sort of way, with crystal clear lakes and rivers, eskers, rocky escarpments, and sparse but interesting vegetation. The fishing is usually very good. There are lake trout, grayling, northern pike, and even arctic char in the far northern waters. The bird and animal life, the arctic

flora, and the gently undulating treeless landscape are totally different from what is seen in more southernly regions of Canada and the United States.

With a party of ten, I made a trip down about 200 miles of the Hanbury and Thelon river system. We saw numerous caribou, musk oxen, arctic wolves, Barren Land grizzlies, a wolverine, countless ptarmigan, geese, ducks, swans, and many other migratory birds I could not identify.

In most of the area firewood was very scarce, although we found some useable dwarf spruce, arctic willow, and arctic birch along some stretches of the river, and frequently garnered driftwood from the shore. In many of these areas there is no firewood at all, so portable camp stoves or compact fuel burning stoves are needed. Although traveling light is a must, the possibility of being shore-bound on a large lake, or otherwise delayed by bad weather, requires taking along extra supplies of concentrated foods such as dry beans, rice, and flour for such an emergency.

An excellent booklet on canoeing and camping in the Canadian Barrens country is *Summer Travel in the Canadian Barrens* by Eric W. Morse, and is available through Northwest Territories Tourist Office, 400 Laurier Ave., West, Ottawa 4, Ontario, Canada. Its twenty-three pages are crammed with information on weather, equipment, and river routes and it includes pictures and maps of the area.

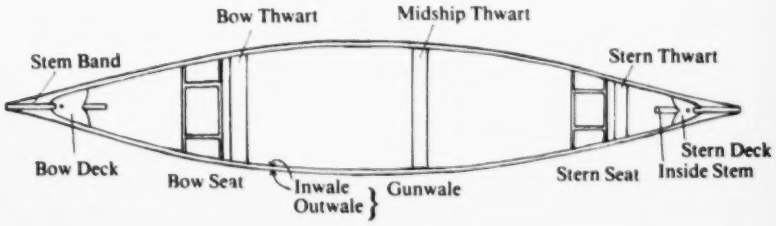
For other information on Northwest Territories canoeing, camping, or travel, write: Explorer's Guide, Travel Arctic, Yellowknife, Northwest Territories, Canada.

Basic Canoe Style Unchanged

By most definitions a canoe is a lightweight, shallow draft craft usually propelled by paddles. In one form or another, the canoe has been part of the culture of about every primitive group of people living near rivers, lakes, or seacoasts. In different areas and throughout history they have been constructed of such diverse but locally available materials as animal skins, reeds, hollowed-out logs, and the barks of various trees. In North America the familiar birch bark canoe was the common type used by the Indians in the northeastern and north central areas where birch trees are indigenous. Hollowed-out log types were used in other areas.

The early exploration of much of this area was accomplished largely by using these similar canoes. Later, explorers, fur traders, trappers, and voyageurs traversed much of the central United States and southern and eastern Canada by canoeing through lakes and rivers. In the mid-to-late eighteenth and early nineteenth centuries, the famous French Canadian voyageurs, hired by fur trading companies, traveled by canoe and portage from Montreal, through the Ottawa River, the upper Great Lakes, and up through the present Minnesota-Ontario border lakes and streams, through the Athabasca and Great Slave Lake area and beyond. They brought trade goods (axes, knives, blankets, utensils, etc.) into the interior to exchange with the

Indians for furs that they carried back to trading centers. Large Montreal thirty-six-foot freighter canoes, manned by eight to twelve men, were used on the Great Lakes as far as Grand Portage or one of the alternate routes above Lake Superior. On other lakes and rivers above Lake Superior, the traders used smaller freighter canoes twenty-four to twenty-six feet in length which they could portage more easily.



Canoe nomenclature and parts (top view)

Numerous Materials Now Used for Canoe Construction

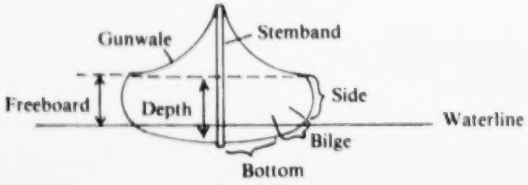
Modern canoes are made along the same lines as the earlier birch bark type, but the materials used are almost entirely aluminum, fiberglass, rubber, cedar strips, or cedar and canvas. There is a new type of canoe called Royalex that is made of foam and plastic. It is recommended because it is lightweight, tough, and noiseless in the water.

After World War II, the now dominant aluminum, and subsequently the fiberglass, models appeared. Each material has certain advantages and accompanying disadvantages. Aluminum canoes need no upkeep, are light yet tough and strong, but they ride high in the water and are noisy. This type is by far the most commonly used in most areas today. The cedar strip and canvas covered canoes handle better, are quieter in the water, and have less freeboard, but are more subject to damage and require considerable upkeep and care. Fiberglass models require a minimum of maintenance and are tougher than canvas types but tend to be heavier and less durable than aluminum.

The most common type canoes range in size from fourteen to eighteen feet in length with beams of thirty-five to forty inches. Aluminum types may be square sterned (for occasional use of a motor) or the conventional double-ended V bow and stern preferred for most recreational purposes. Actually the common double-ended type is just as good for the occasional use of a motor if an adjustable motor bracket on the stern is used. Many aluminum

canoe brands come in both a light and a standard weight gauge or thickness of hull material. On a seventeen-foot size, there is about a fifteen-pound difference in weight between the light and standard gauge models. For normal use in lakes and rivers without rocky whitewater rapids, the lighter weight models are adequate and easier to handle and portage. The lighter weight canoe is recommended for calm water trips when younger boys and girls will be handling the canoe on portages and pullovers.

The seventeen-foot length is the most popular with the average canoeist for most purposes. Although these canoes weigh ten to twelve pounds more than a comparable fifteen-foot size, they have a greater load capacity and paddling speed and are preferable for long trips. The lighter fifteen-foot size, though, is adequate for average use with two canoeists and a moderate load of gear. The standard gauge, slightly heavier models will take rougher usage; so, for long wilderness trips or whitewater travel, they are better for the average reasonably sturdy adult male. Aluminum and fiberglass canoes have flotation chambers in bow and stern filled with sealed-in air or some buoyant material such as foam that will keep them afloat if they are filled with water or upside down. Aluminum canoes, when tipped, usually will dump the paddlers, then right themselves half full of water, and remain afloat. They can support two persons either hanging to the sides or in the canoe.



Canoe parts (end view)

Wooden or wood and canvas canoes and the new foam and fiber types do not have such flotation chambers as their natural buoyancy will keep them afloat. Some older model canoes are equipped with "sponsons" which are bulky, buoyant collars around the outer edge of the gunwales to render them more stable and less tippy. Sponson canoes often are used in casual urban park board paddling and are not efficient for wilderness travel where portaging is necessary. Canvas or wooden canoes when tipped usually remain bottom side up in the water and will support two or three people hanging to the sides. A later chapter on travel will discuss safety precautions in case of overturned canoes.

Most modern canoes have keels, except certain special river models, to add structural strength and to minimize side slipping in the water. Most standard aluminum types have keels about 1/4-inch

thick and 7/8-inch deep but they vary with make and model. Shoe keels are about the same thickness but are several inches wider to allow easier and quicker side movement for fast water river paddling.

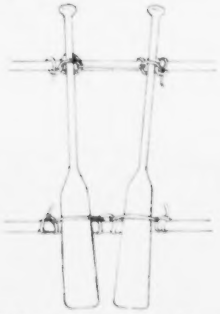
Standard Keel Shoe Keel

Shoe keels and tumblehome or side curvature of hull

Many canoeists, especially professionals, still use wood and canvas canoes because of their ease of handling, gracefulness, and many other qualities. The famous old makes such as Old Town, Prospector, and Chestnut still are chosen by many experts who have the time, patience, knowledge, and skill to care for them properly. In my early canoe-camping days out of Ely and Winton on the Minnesota-Ontario border, we used only wood and canvas canoes. They were great except that they were heavy and required more work to portage. And, after a week or ten days in the water, they seemed always to pick up a few additional pounds.

Most outfitters and canoe rental agencies use seventeen-foot standard weight aluminum models because of the hard and frequent usage they are subject to and the lesser maintenance involved.

Professional and expert whitewater canoeists frequently use specially designed canoes that have covered decks and other features that are not adaptable to ordinary travel and camping. Racing and whitewater models have a narrower beam, sharper taper, and partially decked gunwales with little or no keel. They frequently have curved hull stem to stern lines to aid quick maneuverability.

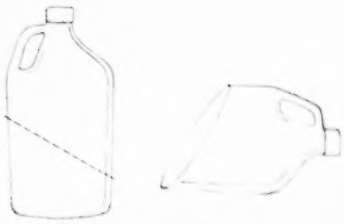


Paddles lashed to thwarts for improvised carrying yoke.

For those people and groups who canoe only occasionally or for one trip a year, it might be best to rent canoes, trying out several types to see which are preferable. Most border and canoe outfitters as well as marine outlets have canoes for rent by the day or week.

For any northwoods or wilderness trip, the canoe should have a yoke for easier carrying over portages. The yoke is mounted on the center thwarts and gunwales and

fits over the carrier's shoulders. If a yoke is not available, properly placed paddles will serve the purpose—though this is less comfortable and more time-consuming to arrange at each portage. (See the chapters on portaging.)

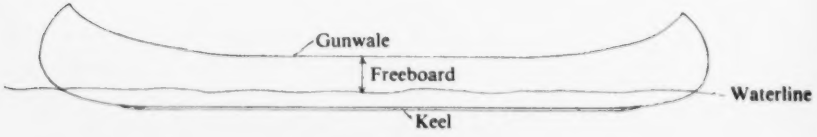


Gallon plastic bottle made into baling scoop

For rivers and extended lake trips, there should be two painters, a 1/4-inch nylon line twenty-five to thirty feet long, one for the bow and one for the stern. They should be kept carefully coiled and tied to the canoe to be available but not underfoot. A sponge tied to the stern seat is useful to remove small amounts of "shipped-in" water and to wipe off dirt or morning dew from the seats. A light-weight bailing vessel (a half-gallon plastic detergent bottle with the pouring end cut out works well) fastened to the stern seat is useful on trips over large lakes or whitewater where the chance of spilled-in water is greater.

Short pieces of strong twine tied at intervals along the gunwales and under the thwarts are useful to fasten fishing rods or other small items in the canoe. Thus, they are out of the way, yet accessible on the water or in a carry. Do not clutter the canoe with too many extras, though, for it costs valuable time at a portage to handle loose items.

Lightweight aluminum folding back rests are available that fit most canoe seats and provide back support for the paddler. They are very useful for persons with back problems or for use on short trips without much portaging. They are not needed or recommended for the able-bodied teenager, however.



Freeboard—distance from center waterline to gunwale

Maximum load capacity with the minimum six to eight inches of freeboard varies with the make and model of canoe. Freeboard means the clearance between top of gunwale and waterline. The load capacity of an average seventeen-foot wood and canvas canoe is about 650 pounds, a seventeen-foot standard aluminum model

about 750 pounds, and a seventeen-foot fiberglass type about 650 to 700 pounds. These figures are approximate and the real test is the amount of freeboard when loaded and trim.

Choose Paddles for Comfort, Durability

There is much diversity in size, material, shape, weight, and cost of paddles. Many of the cheaper ones are fashioned out of a single slab of wood; most of the better ones are laminated to prevent warping and to give more strength, resilience, and beauty. Spruce paddles are popular, reasonably strong, and very light in weight but not quite as durable as the heavier maple or ash types. Aluminum and fiberglass paddles are being used now, and should provide lightness plus strength. I will confess I have never tried them as I love the feel and texture of a conventional wooden paddle. Spruce usually is preferred for ordinary use on lakes or smooth river travel; ash, hickory, or maple for rougher use in rocky, fast-water river canoeing.

The shaft of the paddle should be straight-grained, unwarped, and with a little spring or elasticity. Those with wide blades often are used for river work, and conventional narrower blades are more popular for lake travel. The choice of grip, whether pear shaped, T-shaped, or flaring is up to the individual and whichever feels best to handle. Most veterans keep the blade varnished but remove any varnish from the shaft and grip; then they rub in linseed oil to waterproof and protect the finish.

In a very general way, the length of the stern paddle should be about equal to the height of the paddler's eyes when standing, the bow paddle slightly shorter and about up to the bow man's chin when standing. However, the length, weight, and type of paddle for each canoeist are best determined not by any set of rules, but by trial and personal judgment as to the feel and efficiency of the paddle when used.

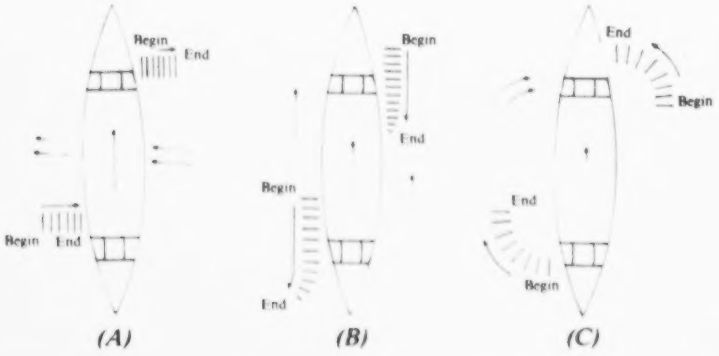
Besides its primary use to propel and steer the canoe, the blade of the paddle is useful as a surface to clean and filet fish, slice bacon, or mold a pie crust. But use your own paddle for this purpose, not one of your friend's new, expensive Clement or Old Town models or there may be disharmony in your party! After a few years' use, a paddle becomes as familiar and almost as indispensable to the canoeist as an old and trusted friend.

A third or extra paddle, preferably a shorter bow paddle, is standard equipment on a trip of any length in case a paddle is lost or broken.

Hard use in fast-water streams or rocky lakeshores tends to blunt, damage, and fray the end of the blade. The damaged edge should be rasped and sanded back to its normal form and smoothness, then protected by varnish or some other tough, waterproof, protective coating. Fiberglass and resin applied to the blade tip give a tougher and more wear-resistant surface than varnish or most other preparations.

III
Paddling and Strokes

So much has been written about accepted paddle strokes that a very minimum will be presented here. It is my opinion that with only a few basic instructions and some diligent practice, any normally active person can learn quickly the basic strokes and techniques needed for ordinary canoeing. The following diagrams illustrate the important basic strokes commonly used, and a little practice in a canoe will demonstrate how to do the strokes and what is accomplished in the water. Normal flat-water paddling without high waves or strong currents is almost as easy and natural as walking.



(A) Push and draw stroke to move canoe to left (B) Straight paddling with weak stern J stroke (C) Sweep strokes to quickly bring canoe around to right

For whitewater, racing, or extended wilderness trips, formal lessons and more experience are needed. None of my canoeing friends nor I ever have had actual instruction in canoeing, and though none

of us claim to be experts, we have canoed hundreds of lakes and rivers with no real trouble.

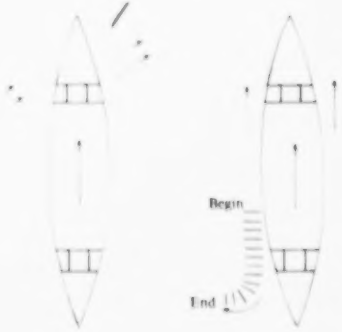
The basic paddling and handling strokes and maneuvers are shown in the accompanying diagram and are largely self-explanatory. The top or butt of the paddle should be no higher than your chin in any stroke. Apply power to the first part of the stroke until the paddle is even with your body, then feather the blade from the water. This means bringing the blade forward horizontally to reduce air or water resistance to its flat surface. Hesitate for a brief moment's rest, then start the next stroke. Keep your back straight, using the strength of arms, shoulders, and legs in each thrust of the paddle.

Before any trip with inexperienced teenagers or adults, a few preliminary instructions, precautions, and practice lessons should be given. Canoes are tippy and unstable even with expert and careful handling, and a spill with gear and equipment in a lake or river can be hazardous as well as uncomfortable.

In normal cruising, the bow man and stern man paddle on alternate sides and in unison as much as possible, but not necessarily on every stroke. The bow man sets the pace and changes sides every fifteen or twenty minutes, or whenever the paddling arm gets really tired and the muscles need a rest. The stern man simultaneously makes a change to the alternate side. Keeping a good steady rhythm or pace in paddling is more effective and less tiring than alternate bursts of speed followed by a slow recovery. Except for emergency situations, the stern paddler "captains" and guides the canoe to keep it on course, and the bow man watches ahead for rocks or obstacles. With straight paddling strokes, the canoe gradually will tend to turn away from the bow man's paddling side, so the stern paddler has to continually compensate by ruddering or using the familiar "J" stroke. If the bow man suddenly sees an obstacle, rock, or something that requires a quick turn before the stern man can act, he can turn the canoe quickly by a draw or push stroke, or by angling his paddle obliquely ahead on the side to turn the bow. This situation is most apt to occur in river travel or in shallow, rocky lake areas.

Bow paddle oblique thrust (shown as /) to turn quickly to right in an emergency

Straight paddling with pronounced J stroke for stern paddler

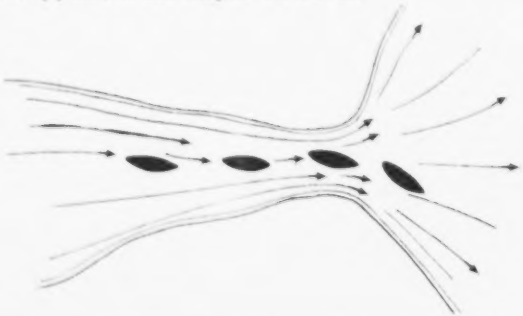


When working with a group of beginners, the leader should pair each canoe team with an older and stronger youth and a younger, less-experienced mate, with the former in the stern. Once a trip of some length is started, it is good to occasionally change partners in canoe teams at a portage or resting place. This encourages all in the group to adapt to new friends and paddling techniques. Naturally some will learn the skill of paddling more readily than others, and changing partners once in a while will prevent discouragement or undue lagging behind.

Ordinarily the stronger, more experienced paddler should paddle stern, but changing about occasionally, though *not* while underway, allows younger paddlers to learn better how to handle the canoe in both stern and bow positions.

Standing up in a canoe while afloat is taboo for beginners. Experienced canoeists, however, may find it necessary to stand up carefully. The stern man, for example, may need to have a better view of the water ahead or some distant landmark, or may need to stand when poling on a shallow river. In most situations the bow and stern men never change positions in the canoe while afloat. Should any movement or change be absolutely necessary, use a very low, careful crawl or crouch and keep the canoe balanced.

Keep the canoe parallel with the river current, bow forward and into, or angling into, high lake waves. Never allow the canoe to go into current or waves broadside because fast-moving water hitting a canoe abeam can cause broaching and dumping. In heavy waves on a lake keep to a shore on the lee (protected) side of points or islands. Quarter into waves obliquely at a forty-five-degree angle. More about this appears in the chapter on travel.



Keep canoe parallel or in line with strong current

In flat, calm water most canoeists paddle seated for comfort and ease, but in rough water or rapids they lower their weight by assuming a kneeling position on the bottom of the canoe in the respective bow and stern positions. This kneeling position is easy for the young, but less comfortable for many adults. While paddling in this kneeling position, keep your rear resting against the seat behind you both for comfort and bracing.

IV
Equipment and Gear

A checklist should be prepared to insure all the needed supplies and equipment are included and to eliminate duplication or excessive weight. A complete basic list can be modified according to the type of trip being planned. Add to it or change it from time to time, but file it away between trips for a handy reference. Once on the trail, there will be no stores to pick up forgotten or omitted items. Conversely, unnecessary items that are included become burdensome on the trail.

On long trips that involve considerable portaging, "going light," or taking only the essentials, is important. On shorter, easier routes a few luxury items such as camp stools, cameras, or a Coleman stove may be included; but too many extras still can be a nuisance.

Gear should always be accumulated in packs with clothing, sleeping bags, and such items protected in waterproof containers. Guard against loose unpacked items that must be carried by hand. Canvas or fabric Duluth-type packs come in several sizes. With strong leather straps, a tumpline, good protective flaps, and considerable capacity, they are the favorite of many old timers. When picking up a filled pack of this type, grab and support the weight by the ears or sides of the flap—not the strap where the rivets or stitches tend to work loose in time. Because this type of pack is used more often than any other, it is good to stencil or initial them on the outside so they can be easily identified as to the owner or the contents.

The more recently popularized aluminum frame packs are satisfactory though they usually have less capacity and are more expensive. Rigid pack baskets and aluminum packs are good for food or miscellaneous gear and they carry breakables or spillable items more efficiently than fabric packs. Breakables and spillables should be avoided or kept to a minimum regardless of the pack they are stowed in.

Time of year, area to be traveled, and personal preference all have a bearing on the equipment needed. A rough summary of recommended gear and equipment for a four- or five-person, one-week wilderness canoe trip without motor is included in this section.

Adjust the quantities according to the number of people in the party and age of the group.

Some of the articles listed are optional (camp stools, Coleman lantern, folding shovel, etc.). The length of time and distance of the trip, the season of the year, and other factors should determine whether they should be included. There also are many items not listed that can be added for short or easy trips according to personal preference and importance to the individual. Such items as paperback books, binoculars, canoe back rests, and cameras fall in this category.

At the conclusion of the trip, when the master list for the expedition is filed away, take a few minutes to jot down suggestions of adjustments for the next trip. A quick inventory of what was brought back unused may indicate a need to revise food or equipment quantities. If there was a noticeable lack of sufficient staples and equipment, this also should be noted.

General Camp Gear (Also See Food List)

*For a four- or five-person, one-week wilderness canoe trip without motor

—Two canoes
—Six paddles
—Two thirty-foot nylon lines for each canoe (bow and stern)
—One large or two small tents with necessary poles and stakes (must be water repellent and mosquito-proof)
—Six to eight large packs
—One grommetted tarpaulin ten-by-fourteen-feet lightweight. Nylon types are lighter and more compact.
—Rope (100 feet of 1/4-inch nylon)
—Four sponges, for bow and stern of each canoe
—One lightweight cooking grate
—Cooking kit containing nesting cooking utensils, pots and pans, spatula, potholder or grabber, plates, cups, knives, forks, spoons, serving spoons, etc.
—Reflector oven
—Griddle
—Canvas folding bucket
—Cooking mitt or hot pads
—One axe 3/4 length handle (twenty-eight-inch pole axe with blade sheathed)
—One camp or folding small Swede saw (sheathed)
—One Coleman lantern plus fuel and mantles (fuel to be added only at campsite) A lantern is optional but very useful. This must be packed very carefully.
—Three or more plumber-type candles (the slow-burning type)

—First aid kit (It is best to assemble your own. Besides being cheaper, it will contain important items which might not be included in one that could be purchased.) Include the following:

Iodine or merthiolate	Earache and toothache drops
Antibiotic	Lip ivo
Burn salve or lotion	Small scissors
Band-Aids	Tweezers
Adhesive tape	Material for arm sling
Gauze	Sunburn lotion
Elastic bandage	Aspirin

Each camper should be responsible for any prescription drugs or medication that is used on a regular basis.

—Bailing scoop for each canoe
—Maps (waterproof if possible)
—Compass
—Flint stick for emergency fire starting
—Folding camp stools (optional)
—Sharpening stone and small file
—One pair of pliers
—Duct tape for canoe or tent repair
—Small coil of fine wire
—All-purpose tape
—Nails
—Twine
—Scouring pad, dish mop or brush—Brillo pads are good
—Flashlight for each individual. Batteries should be reversed (inactive) in pack so they cannot turn on accidently enroute
—Cards
—Small folding shovel
—Needle, thread, buttons, safety pins

* * * *

If a motor is to be used, equipment must include spare spark plugs, shear pins, fuel, and basic tools. Store fuel in the canoe and in the camp with great care. Carry it in the car trunk a minimum distance; buy the fuel at the last possible station. Do not store it in the trunk for the entire trip in case of a car accident or trouble. Fuel for the Coleman lantern should be handled in the same manner.

Personal Gear

—Sleeping bag
—One blanket or space blanket (seasonal)
—Air mattress or foam pad
—Life jacket
—Rain gear or poncho
—Flashlights and extra batteries
—Sheath knife and/or pocket knife
—One pair of sneakers, tennis shoes, or moccasins
—Ankle-high boots or work shoes
—One sweater
—One wool shirt
—Two pair of wool socks
—One jacket or windbreaker (or rain suit tops, but they are awkward to work in)
—Headgear or sun hat
—Warm pajamas or long underwear
—One change each: underwear, shirts, slacks, trousers, or jeans
—One pair of walking shorts or cut-offs
—Two handkerchiefs or supply of Kleenex tissues
—Swimsuit where needed
—Cotton gloves
—Sunglasses with hard carrying case
—Compass
—Whistle (for emergency signals)
—Insect repellent
—Sunburn lotion
—One towel and washcloth
—Razor, toothbrush, paste or powder, hand soap
—Any personal medicines
—Fishing gear (bring minimum in small metal or plastic box, not the typical tackle box)
—Fishing or hunting license (as required)
—Camera and film (optional)

• • • •

In the car wear the basic medium-weight camping clothes and boots to be used for the trip.

• • • •

With any party of young people, it is important that the leader, before departing, checks carefully to see that each camper has the basic gear he or she needs such as life jacket, rain gear, adequate clothing, special medicines—but not any extras that will grow burdensome as the trip progresses.

Tents, tarpaulins, and stakes usually are folded neatly, then tied into one compact parcel with straps or tumpline to aid in carrying over portages and to fit easily in the bottom of the canoe. A tumpline is an auxiliary strap at the top of a pack that is intended to fit over the carrier's forehead to better distribute the weight of a heavy pack. The tents and/or tarp also may be used to tie around other gear for protection and to minimize portage loads. If they are not too bulky, they may fit into one of the large packs containing such equipment as an axe, spade, saw, grill, and utensils.

Food items, individually packaged in waterproof, labeled bags, ordinarily are carried in a separate pack or bag, though they can be combined with grill, utensils, and other cooking equipment—all depending on the available space in each bag. Grate and griddle become blackened and sooty so they should be encased in a separate cloth bag to keep the other items in the same pack clean.

Miscellaneous items such as first aid kit, candles, repair kit, rope, twine, tools, etc., can be packed together wherever there is space.

The extra paddle (always have three per canoe), the tent poles, and fishing rods can be stowed in the canoe bottom or tied inside to thwarts and gunwales so they are out of the way while traveling and during carries.

Maps and a compass should be available for reference during the trip. Sponges and the bow and stern lines should be tied into canoes and secured but out of the paddler's way both on the water and during portage carries.

Each canoeist's personal gear should be in his or her own waterproof bag with rain gear near the top and easily accessible if needed. Usually each camper's clothes, toilet articles, camera, flashlight, etc., fit into one inner waterproof bag and the sleeping bag and air sack or pad in another, then both are carried in one large Duluth pack.

Air mattresses (or sacks) are slightly heavier, though less bulky than foam pads, but they are more comfortable and are preferred by most adults. However, at each move they must be blown up for use and deflated before packing. Young people frequently spurn the use of an air mattress or foam pad, and their bodies usually will rest well without them. But when the weather is cold or damp, the bottom insulation afforded by a mattress or pad is almost a necessity.

Life jackets should always be worn when in the canoe. Many state laws require that a life jacket be worn by each person in the canoe. Do not regard them as a nuisance; instead, consider the life jacket as a potential necessity and a symbol of a good canoeist. Any items that might be needed while enroute, such as insect repellent, sunburn lotion, lip protector or a windbreaker jacket, should be accessible, not at the bottom of the pack. A camera should be available for use but encased in a waterproof container and secured to a canoe thwart, particularly if it is an expensive one.

Fishing tackle, other than a rod and reel, should be kept to a minimum and can be carried in a small hip-pocket-size metal or plastic

container. Aside from minimizing weight and bulk, in most good fishing waters a few good lures (plugs, spoons, jigs), plus a spare line and a few leaders, are all that are needed. The average, large tackle box crammed with dozens of lures and gadgets is cumbersome and unnecessary.

Kneepads are handy so a paddler can kneel in the canoe bottom comfortably and lower his/her weight for greater stability if rapids or rough waters are encountered. A kneeling pad can be improvised using an old hot water bottle partly inflated with air, a six- by twelve-inch piece of foam rubber, or the canoe sponge (if of sufficient size).

Bailing scoops (one per canoe) are useful in very rough water or heavy rain, though a sponge will do the same job for a small amount of shipped-in water.

If a Coleman lantern is carried, it should be protected in a firm, strong container and kept upright to prevent the glass or mantle from breaking and any of the fuel from spilling. It is best to carry the lantern fuel in its own appropriately marked metal container. Extra mantles should be included.

All Duluth or canvas-type bags should be packed with soft or flat items on the back or strap side, hard and lumpy objects on the top or outer side so they are comfortable for carrying.

Space blankets are lightweight, aluminized blanket-size nylon sheets that fold into a very light, small bundle and are better than fabric blankets in cold weather. They are only effective when they can reflect body heat, and when used properly are excellent for cold weather conditions.

Several light garments—a sweater, jacket, windbreaker, or wool shirt—are better than one heavy, warm coat. Different garments can be worn alternately with changes in weather. Layered clothing gives certain insulating warmth not provided by one heavy coat or jacket.

V
Food and Camping Supplies

Canned or bottled items and perishable foods have been omitted from the food list as well as heavy and bulky kinds of food such as fresh potatoes, fruits, or vegetables. The latter are worth considering, however, for a trip involving few or no portages. On short or easy trips a few carrots, celery, and apples can be kept for a few days in a completely shaded, cool area.

Each food item should be removed from its original package or store container, packed in a labeled cloth bag, and then placed in a waterproof, poly or plastic bag. The cloth bag will not break or crush and the waterproof container for each perishable item is a necessity if just for protection from dew-laden camp tables. Foods of a similar type (seasonings, salt and pepper), when not bulky, can sometimes be put in the same bag. For example, one bag can hold plastic containers of peanut butter, jam, honey, etc.

Food packages--divided into breakfast, lunch and dinner units.

Where recipes or directions from the original package are needed, such as the quantities for pancake or cornmeal mix, oatmeal preparation, or dehydrated potato instructions, cut out the recipes and insert them with the material. Rubber bands are handy for closing the bags—have a few extra to replace any that break.

Besides name labeling each bag of food, one can indicate the different types of food with different colored markers. For example, blue-marked bags could be breakfast items such as oatmeal, granola, dried fruit, and Tang; red-marked bags could indicate lunch items such as cheese, bread, peanut butter, and bologna; green could be used for beverages such as coffee, tea, powdered milk, Wyler's, and cocoa, etc.

Non-breakable plastic containers with tight-fitting, screw-type tops can be used for such items as margarine, peanut butter, jam, honey, and cooking oil. It is best not to carry anything that will break down in the summer heat such as milk chocolate bars.

Flour or Bisquick-type mix combined with egg, cornmeal, oil, sugar, and baking powder can be used for pancakes as well as for corn bread, biscuits, gravies, or coating for fish filets. Or one can bring less flour but add a pancake mix which will make the morning pancake preparation faster and easier.

Margarine is not only cheaper than butter, but keeps better in warm weather. It must be repacked, however, in disposable plastic, waterproof containers.

Regular grind coffee is usually preferred over the instant type because everyone loves the aroma of boiled coffee in the morning. However, as it is bulkier to pack for a long arduous trip where rations must be kept to a minimum, soluble coffee is the answer. The newer freeze-dried kinds are best.

Prime quality, slab bacon is not only tastier but keeps better than the pre-sliced, packaged product. Slice off only the amount needed for each meal and the rest of the slab will remain good for one to two weeks under normal conditions. Slicing the bacon will require a well-sharpened hunting knife. Read more about food items in the chapter on preparing the campsite.

Brown sugar, either hot or cold, is useful for sweetening pancakes, oatmeal, or for making syrup. Popcorn is concentrated and nutritious. Pop it over an evening campfire in a large covered utensil with oil; and using a cooking mitt or pad, keep shaking the utensil above the fire until the corn is popped. A scant one-fourth cup of kernels is about enough per batch. Have another utensil off to one side of the heat in which to keep the popped corn warm until you have prepared all you want, and add a little margarine and salt.

Powdered eggs or egg substitutes can be scrambled or used in pancakes, French toast, corn bread, or other baked recipes just as fresh eggs would be used.

A bit of aluminum foil is useful to wrap, cover, or protect leftover food portions. It also can serve as a temporary container for keeping bacon drippings that may be needed later for frying fish or other food.

Paper towels can be used to dry or wipe out dishes, clean off a pan or griddle, or serve as campfire napkins.

Be sure the supply of kitchen-type matches is thoroughly waterproofed in a proper container. Any smokers in the party should provide their own supply of matches.

Food

Following is a suggested food list for a group of four or five adults on a one-week canoe trip in a wilderness area. For larger or smaller parties, simple arithmetic will adjust quantities to the size and ages of the group and duration of the trip. Quantities are approximate and will vary with such factors as age, preferences of those in the party, and the time of year. Although many campers use rather expensive freeze-dried and already-prepared food items available from outfitters, they have been omitted here in the interest of economy and simplicity. Food preparation is an enjoyable part of camping, and wholesome, tasty meals can be prepared easily and economically from the basic food on the list. Most of the items can be purchased in ordinary supermarkets and grocery stores. In general, the freeze-dried foods and already-prepared meals are available only at special stores or outfitters and are far more expensive than the basic kinds listed here.

—Five pounds flour or Bisquick. Bisquick is more useful for general baking than a straight pancake mix. You can prepare a Bisquick-type mix at home.
—One pound corn meal
—Small can of baking powder
—Two pounds white sugar
—One pound brown sugar
—Salt
—Pepper
—Three pounds margarine
—One pound powdered eggs
—Two pounds dehydrated potatoes
—One pound rice
—Five pounds slab bacon
—Processed chipped beef (no refrigeration needed)
—One pound cooking oil or Crisco-type shortening
—Three large bread loaves (compressed in wrappers)
—One jar peanut butter
—One jar jam
—Wyler's or pre-sweetened Kool-Aid (particularly for summer trips)
—A few bay leaves in an envelope
—Small amount of oregano and marjoram
—Two pounds dried beans (Remember these must be soaked several hours before using in a recipe.)
—One dozen bouillon cubes (for a pickup hot drink or to add to soups)

—A few folded newspapers (for starting fires or using as a camp tablecloth)
—One box kitchen matches (in waterproof container)
—Three dried puddings
—Two cake or brownie mixes
—Small plastic jar of honey
—Powdered milk pre-packaged in sizes for one quart per envelope (or enough powdered milk to make at least sixteen quarts of milk)
—One large jar Tang or powdered citrus-flavored breakfast drink
—Four dehydrated soup mixes
—Two pounds mixed dried fruit
—Two pounds raisins
—One pound oatmeal
—Two pounds coffee (Bring Postum or cocoa for younger campers.)
—Two dozen tea bags
—One-half pound popcorn
—Two pounds cheese
—Granola or similar ready-to-eat cereal-type mixture
—Six semi-sweet chocolate bars
—Two rolls toilet paper in separate plastic bags
—One insect bomb
—Two large Ivory soap bars (floats—handy for ablutions and washing clothes)
—One roll paper towels
—One plastic bottle of liquid soap for washing dishes
—Three large sweet onions
—One pound macaroni
—One small can tomato paste
—One pound bologna or summer sausage
—One box Rye Krisp or pilot biscuits
—Marshmallows for cocoa drinkers
—One Halazone or water purifier (In most wilderness areas, water is safe to drink and to cook with. If there is any doubt, boil water and/or use Halazone purifier. Never drink river water or use it for cooking.)
—Aluminum foil

* * * *

On short weekend river trips outside parks and where cans and bottles are not prohibited, such items as canned meat, spaghetti mix, canned beans, fruit, and tomato juice can be included. Bring back or carefully bury the empty containers. Never leave any refuse.

Some campers measure out, then individually package and label the ingredients for each meal for every day of the trip at home before final packing. Thus, for each day of the planned trip—Monday, Tuesday, Wednesday, etc., there would be one large package and inside each of these packages, breakfast, lunch, and dinner items would all be in individual parcels. This procedure may save time and effort on the trail, but leaves little latitude to alter daily menus according to the weather, fishing luck, unexpected delays,

and other factors. Most camp cooks prefer to prepare each meal from the food pack ingredients according to the day's activities, alternating the menu daily as whim and weather indicate.

It should be remembered that growing young people tend to eat more than adults, and that more food is needed in the colder spring and fall weather than in midsummer. Long experience has taught me never to depend on fish as a daily or frequent food supplement even in areas where fishing should be good. If fish are plentiful, adjust the menu accordingly. Also, on a long trip over large lakes, a party may be windbound and delayed, and thus need an extra day or two of rations. Such extra concentrated, yet nourishing, food items as macaroni, rice, beans, and oatmeal are suitable for emergency fare.

Menus for Camp Cooking

For a quick breakfast, the following provides an easy, nutritious meal: fruit-flavored drink, cold fruit soup, milk made with dry powdered milk mixed with potable water, granola or oatmeal, toast (while the bread supply lasts), and coffee or cocoa.

For a more leisurely breakfast, try pancakes or scrambled eggs (made with reconstituted dried eggs) with bacon, plus Tang and fruit soup for a filling meal. While the supply of bread lasts, French toast is easy to prepare and goes well with the other items. Use brown sugar in the place of syrup, or make it into a syrup for pancakes or French toast. Dried, powdered milk mixed and shaken up the night before seems to taste better than when freshly made at mealtime (providing it can be kept cool overnight).

Bacon grease can be saved by letting it solidify on a piece of aluminum foil or in a small container. Use it later for frying fish or in pancakes or other recipes that need oil or fat.

Fried fish tastes great for breakfast. Try serving fish in place of bacon.

Any of the following can be combined in various ways to make a good camp breakfast:

Tang	oatmeal	toast	fried eggs
fruit soup	granola	French toast	scrambled eggs
milk	pancakes	jam	bacon
cocoa	fish	marmalade	spam

Oatmeal is delicious served hot with a little margarine and brown sugar on top, or add a few raisins as the oatmeal is cooking and serve with milk.

To make the next morning's breakfast quicker and easier make the fruit soup, the syrup, reconstituted milk, and dry pancake mix the night before; add the oil, eggs and liquid the following morning.

To make fruit soup, soak some raisins and mixed dried fruit in enough water to cover, and then simmer over a low fire until

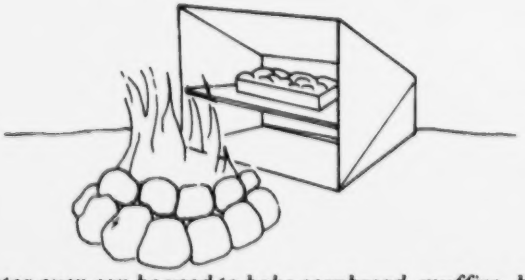
tender. Add a little sugar (optional). Allow about one-half cup of the fruit soup per person. Try to avoid having leftovers of anything for it is impossible to carry them if you are moving on.

Pancakes can be made from a regular pancake mix, a Bisquick-type mix or by adding a little cornmeal, baking powder, sugar, powdered milk, and eggs, plus the shortening and water, to flour. Pancakes are nourishing and a favorite breakfast fare. Any extras, when cold, make a delicious lunch when sweetened with brown sugar or honey, or used as a bread substitute with cheese, peanut butter, raw onion, or a can of sardines.

Prepare the lunch items while someone else does the breakfast dishes before the food pack is stowed away. Pack the lunch items were they are easily available to avoid having to rummage for them at noon. A pail or a large pan and cups can be used to make and serve freshly boiled tea or cocoa as well as for carrying part of the lunch ingredients. After paddling all morning find a place on shore, kindle a small fire, and brew the tea or cocoa for an invigorating lunch break. Following are some possibilities, either for a lunch in camp or as a shore lunch while traveling:

bannock
cold pancakes with brown sugar
pilot biscuits
rye krisp
cheese
can of sardines
summer sausage
bologna
sweet onion
pkg. dehydrated soup or bouillon
bread (you can carry enough for a day or so)
cornbread (made in the reflector oven the night before)
peanut butter
jam
tea, coffee, bouillon
Wyler's or pre-sweetened Kool-Aid-type drink (hot weather item)

Sliced bread for a canoe trip may be left in the original wax or poly wrapper and compressed to reduce its bulk. Although the slices will be thin and hard to separate, the bread is nutritious and easier to pack and carry. Do not attempt to take along a large supply of bread for a long trip because it will get stale and moldy. If space



A reflector oven can be used to bake cornbread, muffins, brownies and even a campfire pie.

and bulk are not a problem, carry the bread double wrapped as is; it stays fresher and tastier.

Supper menus may include fried fish or fish chowder when luck is good. Add cornbread or biscuits if the reflector oven is set up and time is available, and this is a campfire meal fit for a king. Cream chipped beef or bacon gravy with potatoes, rice, biscuits, or toast is another easy and nutritious menu. Mixing macaroni and cheese with tomato puree also makes a filling main dish. Various dried soups can be prepared with boiling water and make a nice addition to any meal. Packaged puddings can follow as a dessert: chocolate, tapioca, or butterscotch are good flavors. Following are some suggestions for supper menu items:

fried fish
fish chowder
creamed chipped beef
beans cooked with onion
and bits of bacon or
summer sausage
soup
cornbread
lentils
split peas
mashed potatoes
rice
macaroni and cheese
biscuits and brown gravy
pudding or baked desserts

When plenty of time is available on a day that is too rainy or windy for travel or fishing, try cooking some dried beans. Soak them the night before then pour off the water, add fresh water, and simmer slowly for several hours until tender. Drain, then add cooked bacon chunks with most of the bacon fat, sauteed onion, brown sugar, salt and pepper, a little tomato puree if available; then simmer awhile longer for a real outdoorsman's dish.

Our favorite way to fry fish is to shake the filets in a plastic bag with a small amount of salt, corn meal, and flour to coat each chunk of fish—then fry slowly in heated oil or grease over a medium-slow fire, turning once. Fry until tender and flaky (it doesn't take long).

After any camp meal is finished it is best to wash the dishes and utensils promptly while the fire and water are hot and everything is easier to clean. Dirty dishes or food remnants are apt to attract insects or unwanted animals (including bears) into the camp. Besides, these same dishes and utensils will be needed for breakfast, and dirty dishes and a cold campfire are dismal to behold in the morning. Dishwashing chores, like all the other camp duties, should be alternated so the task is rotated on successive days.

If fishing has been good and you have fried them the usual way for each meal, try fish chowder and serve it with reflector oven-baked cornbread. Filet the fish, cut into one-inch chunks, and simmer in a minimum of water until just barely tender—just a few minutes. Do not drain. Fry bacon (or salt pork) diced, saute an onion or use dried onion flakes, and add to the fish and juice in which it was cooked. Next, stir in a small quantity of dehydrated potatoes (flakes or powder), dried milk, flavor with margarine, salt,

pepper, a touch of bayleaf, oregano, and/or marjoram. Dilute with potable water to the desired consistency, and simmer (do not boil) slowly until flavorful. The potato adds flavor but also acts as a thickening agent so use sparingly. This tastes much better than using flour as the thickening agent for the chowder. Pilot biscuits will do to compliment the chowder, but cornbread or biscuits make the perfect combination.

Cornbread, biscuits, muffins, brownies, or cake mixes can be made easily by following the package recipes and using the reflector oven properly. Start or heat the reflector oven first, having it sufficiently close to a good, hot fire and as level as possible. Keep the fire evenly hot until the baking is completed. The food being prepared must be watched, turned occasionally, and removed as soon as it is sufficiently baked.

More courageous cooks might try baking a campfire pie if blueberries, June berries, or wild raspberries are available. Pre-soaked raisins, dried fruit, or a packaged pie filling rather like a pudding, can also be used. Use readymix pie crust sticks or mix your own with flour, shortening, salt, and a tiny bit of water. For the bottom crust, roll out or press the dough flat with the shank of a canoe paddle or a round, plastic bottle; then add fruit, sugar, a little flour, and margarine and bake in a hot reflector oven until juicy and done. For the top crust, lay strips crosswise or use a regular top crust pinched to the edge of the pan. In the latter case, be sure to cut slashes in the middle of the crust to allow steam to escape. For pudding-type filling, prebake the bottom crust, then add the filling.

Bannock is nutritious and filling and can be made quickly in a round-bottom skillet or frypan over the campfire. It does not require the reflector oven, nor as large or hot a fire as is needed for baking. To make bannock:

> Mix 1 cup of flour, 1 tsp. baking powder, 1/4 tsp. salt, 3 tbsp. margarine, 2 tbsp. powdered milk plus enough water to make a workable dough. Fry in the greased griddle until underside is done, then turn over to brown the top side. With margarine, jam, honey, or peanut butter this makes an easy and tasty lunch—especially when served hot.

Packaged puddings come in a variety of flavors and are nutritious, easy to prepare, and fill the occasional craving for something sweet. They are concentrated, light, and non-perishable, requiring only the addition of powdered milk and water. Buy the kind of pudding that requires a few minutes cooking as the so-called instant puddings do not always set or thicken properly without refrigeration. Mix together the pudding, powdered milk, and water according to directions on the package, stir, bring just to a boil (very easy to scorch), set aside to cool, and a quick tasty dessert is ready.

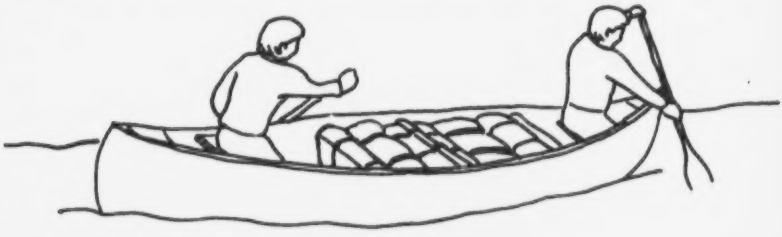
In every instance where packaged directions are required, it is useful to cut out the printed directions that are on the packages. This should be done as the original package is emptied into the plastic or cloth bag when the preparatory packing is done at home.

VI
Canoe Traveling

For an extended wilderness trip in certain areas, it is necessary to obtain permits. It is always wise to leave a rough itinerary of the planned route with a forestry agent, an outfitter, or park officials at the point of entry so that help can be sent in case of any accident or emergency.

Getting from home to the area where the actual canoeing begins may take much of the first day, thus leaving little time to canoe or set up more than a temporary camp. To more easily prepare that first night's supper, carry the necessary food items separate from the general food pack. This also affords a faster start the next day for the real trip.

When loading gear into the canoes, have the canoes partially or completely afloat. Keep all packs and weight centered low in the canoe, balanced, and tied in. If rain, rough water, or rapids are likely to be encountered, protect the gear by covering it with



Correctly loaded, well-balanced and trim canoe

ponchos or tarps. If rainy weather looks imminent, a couple of small six- to eight-foot poles placed on the bottom of the canoe under the packs will help keep them above the bottom where water collects. The loaded canoes should be trim, with bow and stern about even or the bow very slightly higher. Do not overload. Keep a minimum of six to eight inches of freeboard (distance between gunwale and waterline at center of canoe). There should be bow

and stern lines coiled and available, each about thirty feet in length. These should be attached to the canoe and have a tied sponge at each end for mopping up water in the bottom or to use as kneeling pads in emergency paddling.

Each person should wear a life jacket even in calm water. A map and compass should be available in each canoe, and rain gear easily accessible to each paddler. This is not the time to have to unpack the gear to search for protection from rain, and to get soaked and bedraggled at the start of a canoe trip is foolhardy.

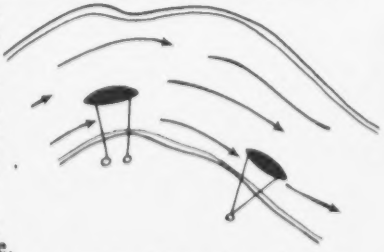
In general, the stern paddler guides the canoe and keeps it on course. The bow paddler watches ahead for rocks or rapids, signals the stern man of any obstacles or problems, and, in an emergency, can quickly swerve the canoe to the right or left with a push or draw stroke or a forward oblique thrust of the paddle.

Spoken signals or warnings are not always heard by the stern paddler, so it may be wise to establish signals that will be understood.

The stern and bow men paddle in unison under most conditions and on alternate sides of the canoe. Every few minutes the paddlers should change sides (never positions) to rest the paddling arm. The bow man usually initiates the change and the stern man follows. When the party consists of several canoes, the group should always keep within sight or hailing distance of each other, with the older, most experienced canoeists ahead and astern of the convoy.

On a river it is wise to have one canoe keeping ahead at all times with the others following reasonably close behind. Otherwise, the party can easily be separated by river bends and turns, and it is a discomforting feeling to not always know if one of the canoes is upstream or down.

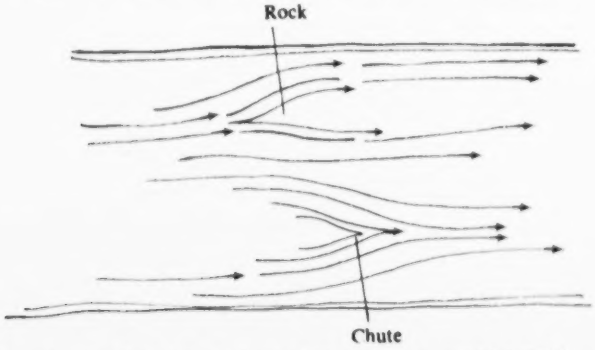
When river canoeing, also watch and listen for rapids or falls that may be ahead and could be dangerous or impassable. When there are rapids ahead, pull ashore and scout the situation along the bank. Unless experienced in whitewater canoeing, take no chances in any rapids that look formidable. Bad rapids, cascades, or falls have to be portaged and there usually will be a portage path evident on one side of the river or the other. Lesser, but still possibly dangerous whitewater areas, can be "lined down" to a smoother stretch of river. "Lining" a canoe means carefully walking it down in fairly shallow water along the shore with one or preferably two persons controlling the canoe by hand, using the bow and stern lines as needed. A similar maneuver when going upstream is called "tracking." It is because of situations such as this, as well as for walking portages, that sturdy walking boots are recommended rather than sneakers or tennis shoes. However, on lake travel without portages, sneakers are appropriate.



Lining canoe along shore in fast or rocky water

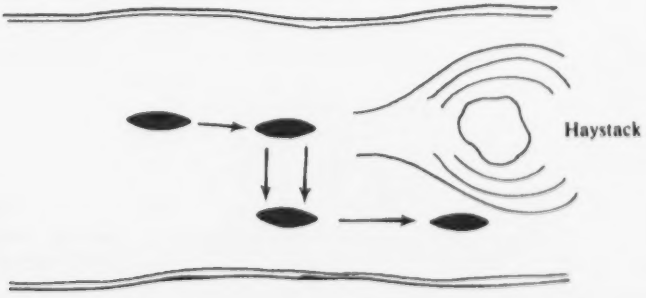
When fast or whitewater is paddled, it is safest and provides better stability if both the bow and stern men get off the canoe seats and down into a kneeling position on the bottom of the canoe. Never allow one person to run a rapids alone unless he is an experienced and fully equipped whitewater expert. If there is any doubt about fast water, walk, line, or portage the area. Canoe accidents can easily happen, the least of which can cause inconvenience with lost or sodden gear, and the worst, personal injury or loss of life.

A "chute" in fast or whitewater means a deeper and usually safer channel, and is so indicated in the current by an inverted troughlike V with the open end upstream. Conversely, a dangerous



V ***upstream*** *showing rock or obstruction to avoid (<)*
V ***downstream*** *showing chute or deeper water for best route (>)*

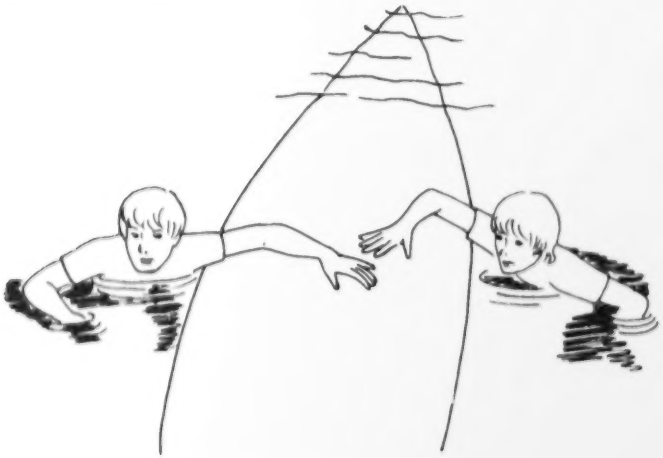
rock or obstruction just under the surface that should be avoided is revealed in the water as an inverted V with the narrow end pointing upstream. A small patch of standing waves where the current is fast is called a "haystack" and occurs where the water drops rapidly from shallower to a deeper hole. They should be avoided or at least navigated carefully because they can dump much water into the bow of the canoe and sometimes overturn it.



Keep canoe parallel or in line with strong current

Streams with numerous bends usually have the deep channel on the outside. In fast water always keep canoes as roughly parallel with the current as possible. If rushing water hits broadside, it easily can tip or breach the best of canoeists.

If hung up on a rock in shallows, it is best to step cautiously out of the canoe and dislodge it, then head the craft properly downstream. If you do dump or tip over, *hang on to the canoe*, keeping it downstream from you and forward of your body. In this fast water situation, the bow man should hang on to the canoe while working his way toward the stern upstream to avoid being pinned between the canoe and any rocks or obstacles. In any sideways, broadside spill, try to keep the bottom side upstream. If the open side is upstream, the current will quickly fill the canoe with water making recovery more difficult.



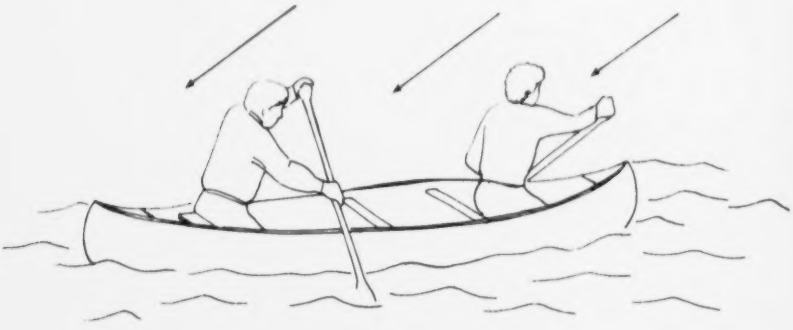
Manuevering to shore, paddlers hold on to overturned canoe

After any spill, swim and manuever or wade the canoe to safe, shallow water or the shore to empty the water from it, recover, retie the gear, and continue the trip. In cold weather, swamped, wet paddlers should stop and change into dry clothing. This is why clothing should be in a waterproof sack. If circumstances allow it, build a small fire for warmth if the paddlers are still cold.

When traveling on shallow, hard-bottom streams or rivers, especially against the current, poling is more efficent than paddling. To do so, stand with feet apart in or near the center of the canoe, and drop the end of a light, ten- to fourteen-foot pole into the water alongside the canoe, then push against the bottom of the river or stream and move hands upward, "climbing" the pole to force the canoe ahead.

Poling canoe in shallow water

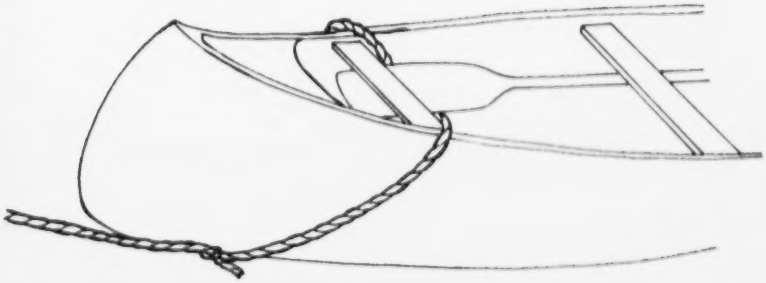
Avoid or minimize travel on large, open lakes where even moderate winds can cause very rough water. Whenever whitecaps are prevalent, it means fairly rough paddling is in the offing. Whenever water is too rough for safe and enjoyable canoeing, wait ashore for the wind to abate. Winds and rough water usually are greatest with high sun near midday and early afternoon, but they frequently diminish as the sun goes down in the evening. In large, rough lakes it is advisable to travel in the early morning or evening hours, and keep the course as close to the lee shore (protected from the wind) of any islands or points of land that are available. If paddling through rough water is unavoidable, take the same precautions as in running rapids. Kneel on the bottom, have lines available, avoid running broadside to waves, and "quarter" or keep the waves at an oblique forty-five degree angle to bow and stern. It is possible to keep on course by turning and tacking at intervals.



Quartering at 45 degree angle into high waves

When entering a large, open lake with a following or tail wind, keep in mind that as you progress down the lake the waves will continually build up higher and higher with the increasingly full sweep of the wind at your back. Heavy waves from astern also can be dangerous; and by the time this situation develops, it could be difficult and dangerous to attempt turning back or going toward any shore. When wind and waves are astern and high enough to spill water into the canoe, a bucket or utensil trailed astern as a sea anchor will slow down speed, help keep a course headed downwind, and prevent broadside broaching.

Another way to safely traverse large bodies of water is to lash two canoes together, catamaran-style. They sould be roughly parallel, slightly closer together at the bow to minimize splash water between the canoes; four feet apart at the bow and six feet apart at the stern is ideal. Ten-foot, strong but limber poles, one and one-half to two inches in diameter, are doubly tied or lashed across the gunwales and to the thwarts, one near the bow and one near the stern. The canoes should be about three feet apart at the beam or middle. Needless to say, this arrangement must be anticipated while on shore, the poles cut, strong rope available, and the canoes lashed properly. This also works well on long traverses or on extensive stretches of water without frequent portages using a three to five horsepower motor bracketed on one canoe. Motors are forbidden in many park areas and should be used only on designated larger lakes.



Proper tie for towing canoe

In a situation where a second canoe has to be towed, the line should be fastened to the towed canoe so that it is tied under the keel at the bow to keep the front end reasonably level and low in the water. If the line is tied at the top or deck of the bow, the towed canoe whips around and is unstable.

For trips of a week or two in length, and over several lakes of any size, plan for a day or two per week of no travel. This allows time to rest, relax, fish, wash clothes, swim, botanize, and explore the area. There also may be unavoidable delays such as being shorebound by occasional high winds and rough water.

When traveling across unfamiliar lakes, keep maps and compass in sight; continually check present position on the water with the map. Islands, points, cliffs, tall trees, and other landmarks should be noted, especially if the itinerary calls for returning over the same route. Frequently look backward at landmarks because on the return trip the scene will be reversed and the landmarks will look different when approached from the opposite angle.

Orient the map with compass or actual direction by having the top (north) part of the map point north even when the lettering is upside down (as it will be traveling south). This eliminates the possible confusion of watching for landmarks on the incorrect side.

Sometime around midday, when a rest and some food are welcome, look for an open and pleasant spot to beach the canoe, rest, and have a shore lunch. The food and any utensils needed should, of course, be readily available without having to ransack the food or gear packs. Preparing this small lunch pack is the responsibility of the breakfast crew while finishing the clean-up tasks. Pilot biscuits, rye krisp, cold pancakes with brown sugar, raisins, cheese, salami, bologna, or bread, if available, are all easy and nourishing. If time permits, build a small fire and prepare a bucket of tea or cocoa which will be refreshing and stimulating.

On large lakes and away from shore, always watch the sky and clouds. Be alert to changes in wind that could bring on sudden storms or squalls and rough water.

Do not wait too late in the afternoon or early evening to look for a campsite for the night. In many areas they can be few and far between, and spending the darkness hours erecting a tent on brushy, rocky, or steep areas is no fun.

When all has gone well (as it usually does) and camp is set up, someone in the party may want to do a bit of evening fishing or exploring by canoe. It is best to start upstream (on rivers) or against wind and waves on a lake so that the return to camp, possibly after dark, will be easier and safer.

VII
Portaging

Portages or "carries" are a part of most canoe trips of any length, especially through lake country. Portaging requires some work, but also allows a time to stretch one's legs and rest the paddling arm while walking a wilderness path to the next lake or stretch of river. In frequently traveled areas and parks, usually portages are marked by signs that can be spotted for some distance. They customarily indicate the next lake and usually show the distance to it in rods (sixteen and one-half feet) in the United States. In Canada the distances frequently are shown in chains (sixty-six feet).

In less traveled wilderness areas there may be no portage signs on the shore though the map may indicate one. In this case, read the map that applies to the area carefully and watch the shoreline for the most likely place. The portage is most apt to be, though not always, in a declivity in the hills or shoreline, near an outlet or inlet to the lake, or near the area in closest proximity to the next lake as indicated on the map. An opening in the trees or brush, litter or discarded articles on the shore, aluminum or paint scratches on the rocks may help find an unmarked portage.

Upon reaching the portage, even though the canoe party is tired from paddling, it is best to make the portage with all the gear and canoes first, then rest at the far end of the trail rather than where the trail begins. While loading and unloading, keep the canoe

Portaging canoe, one man using paddles as yoke

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completely or almost completely in the water. If one end of a loaded canoe is out of the water with no support under the middle, the weight of gear or a person reaching for a pack "bridges" the canoe, causing undue strain on the hull and keel. The craft becomes unstable and "tippy" and could more easily dump.

Before starting over the portage, have everything possible stowed in packs or lashed to the canoe to avoid having to carry any articles in the hands. Secure paddles under seats and thwarts at either end of the canoe as soon as it is on the carrier's shoulders. This helps to balance the canoe. Be sure that the canoe ropes are coiled or tied in so they cannot drop down and get under the feet of the carrier.

A person with a pack or two who can scout the trail should be first over the portage. Duluth-type canvas packs should be picked up by the "ears" or flaps—not the straps—to avoid extra stress on the rivets that can break through the fabric. For heavy packs, support some of the weight by utilizing the tumpline across your forehead. On long portages, stop and drop the load when you are tired. Walk back empty-handed a second time to the same point. This is more restful and efficient than struggling all the way over a long arduous portage without resting.

Fishing rods, long, light tent poles and the like should be lashed to the canoe along and inside the gunwales, and the paddles used either as walking sticks or placed between the bow and midthwarts of the canoe. Especially on rough, steep, or hilly portages, a paddle can be of considerable help as a walking stick to help keep balance.

The canoes are more cumbersome and heavy to carry than the average packs and should be portaged by the more sturdy and experienced canoeists. Canoes for wilderness trips should have a yoke to make carrying easier. Getting the canoe up from the ground and over the shoulders properly is not difficult, but it does take a fair amount of strength and some practice.

There are different ways of getting a canoe shouldered and ready to portage. Following is the method many find to be easiest. With canoe resting flat on water or land, grasp gunwales with one hand on each side of the middle thwart or yoke, tilt canoe on its side with keel resting against your legs. Bending your knees, pull canoe onto your lap with left hand on gunwale farthest from you. Using your stomach and knees, flip or toss (do not lift) canoe upwards. Turn the canoe upside down as you duck under to get your shoulders squared with the yoke.

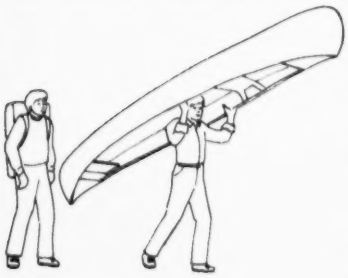
When getting the canoe down from your shoulders, ease the stern slowly to the ground, duck your head out from under the yoke, grasp yoke and thwarts and roll it gently away from you to the ground, right side up. Eventually, this procedure becomes routine but it does take some practice to master it.

For the beginner or for younger campers who lack sufficient strength or experience to swing the canoe over and up onto the shoulders, have a second person hold the overturned bow off the ground while the carrier positions himself under the canoe with shoulders to the yoke. When there is no yoke, position the paddles with the ends wedged under the bow seat and thwarts, and with

blades parallel and tied about a foot apart in the center of the canoe.

For an unusually heavy canoe or with smaller or younger campers, "two man" the canoe over the portage with one person near the bow and the other near the stern of the upended canoe. This is frequently the most practical method used by young people, women, and girls.

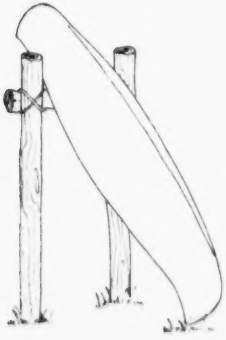
If the portage is long, over a quarter of a mile or more, watch for canoe rests along the side of the trail. The canoe rest is a horizontal pole set about ten feet off the ground between trees or supported by posts. Here one can stop, lower the stern to the ground, the bow over the frame, rest a few minutes, then reshoulder the canoe and proceed without having to lift the canoe back up. In primitive areas that do not have canoe rests, trees with horizontal branching or close parallel growth that will hold the bow safely eight to ten feet above the ground will allow a rest in the same manner.



Going over a portage

The last person over the portage should always check the spot where the gear was unloaded to be sure nothing was left behind or dropped. Many times paddles, rods, or other gear have been lost or left behind on portages by careless canoeists. Having all gear and articles in the packs or lashed to the canoes not only makes portaging easier but helps prevent such losses. Observe the same precaution when packing the canoes to resume the trip to the next lake or stretch of river. Load with the same attention to balance and with the same care that was used at your intial starting point.

When pulling away from the shoreline, if the party is returning over the same route, look backward to study the appearance of the portage and shoreline. This is how it will appear when approaching it on the return.



Canoe rest—very welcome on long portages

VIII
Campsites and Making Camp

Everyone looks forward to a good campfire, warm food, and a night's rest after a day of paddling and portaging. Good campsites are numerous in some areas, especially along rivers in the central part of the country, but are few and far between in other areas such as the Laurentia Shield wilderness of the Canadian border country and much of Ontario, Quebec, and eastern Manitoba. This is usually the case in heavily wooded, brushy, or mountainous regions. Whatever the area, do not wait too late in the day to start looking for a possible campsite as it is difficult and fatiguing to make camp after dark.

A good campsite should have sufficiently clear, level ground for the tents and be open enough to allow room to move about and allow some breeze to keep mosquitoes at a minimum, especially during the summer. In early spring or late fall with fewer or no bugs and cooler weather, a more sheltered location on lower ground is better. The water should be reasonably accessible from the campsite in order to beach the canoes and unload gear. Close proximity to the shoreline is important and it is advisable to seek slightly higher, level ground that is free of brush, debris, or low overhanging branches. Accessible firewood and a few trees for both protection and support for a tarpaulin are desirable. If stormy weather is imminent, keep away from tall solitary trees that could be struck by lightning, or dead trees that high winds could blow over.

On lakes, good campsites are most apt to be found on points or small islands and should be scouted carefully before beaching the canoes and unloading the gear.

After deciding on a campsite and unloading gear, pull the canoes completely out of the water and turn them over. A canoe has an uncanny way of floating off by itself if not beached properly. Paddles, fishing rods, and similar gear should be placed where they are not underfoot and apt to be trampled on or lost.

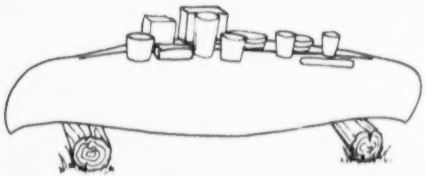
On rivers where the banks are steep and there is no shelving shore-

Campsite—camp made and ready for evening meal

line, the canoes must be unloaded and left in the water. Carefully snub and tie them at the bank after unloading, having the bow and stern so tightly secured that the motion of the current cannot work them adrift.

Any litter, dead branches, or obstructive rocks around the immediate campfire area should be removed. Dead or overhanging branches should be cut off to make moving around easier and safer.

Each camper should have specific chores to perform and the assignments can be changed and alternated from day to day by the camp leader. Putting up the tents and tarpaulin and getting bedding and perishable supplies under cover should come first—along with procuring firewood and setting up the campfire and cooking area. An overturned canoe makes a good temporary table and working area for the cook, and provides a surface upon which to place the utensils needed and the food for the evening meal. This is also a good time to hang up and air out any damp sleeping bags or clothing if there was no time to do so before breaking camp that morning.



Upturned canoe used for temporary table

In a situation with several young, inexperienced campers, it is helpful to announce at the first campfire or at the start of the trip that there will be a "Best Camper" and a "Goof Off" award at the end of each day (or at the end of the trip). A "Most Improved Camper" is a final award that means more sometimes than "Best."

Adults usually find their specialty, whether it be woodchopping, tents, or dishwashing, and assume these chores as routine. The cook, who previously packed and labeled the food, should get out the needed supper items and arrange the fireplace grill to his liking and convenience.

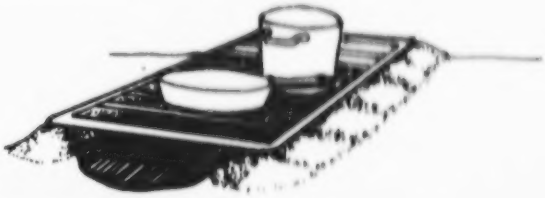
Prepare a Safe Campfire Site

The campfire site, safely away from branches or roots that might catch fire, should be cleared of all flammable leaves, twigs, or duff. Rocks, properly arranged, will keep the fire from spreading, hold the heat, help repel any wind, and support the cooking grate. Rocks with flat surfaces placed around the campfire can be used to hold utensils and keep cooked food hot. In areas where there are no rocks to construct such a fireplace, and where the surface is soil, a small, rectangular one-foot-deep trench will contain the fire and the sides will provide support for a grate.

Starting the fire is elementary enough and easy when conditions are dry and good firewood is available. Starting and maintaining a fire under wet conditions, however, requires more care. Use loose outer birch or other bark from dead trees, dry lower twigs from standing trees and from dead fallen trees for tinder or kindling. Wood from living trees not only makes poor firewood, but cutting or mutilating such trees is boorish and illegal in most areas. Cut the gathered wood into short lengths, split to expose the dry inner wood, and then further split or cut into splinters and shavings.

In the campfire area make a small pile of the dry birchbark, shavings, or small twigs on and above a few supporting sticks or stones allowing space underneath for a lighted match and sufficient air to start the fire. Ignite the match close to and windward of the tinder so that it will not burn or blow out before the tinder catches. A cigarette lighter or a lighted candle may be used if available. Once the tinder and shavings catch, slowly add increasingly larger kindling pieces one by one as the fire progresses until full-sized firewood will catch fire without putting out the small initial blaze.

As soon as the fire is going well, place a large, filled dishwater utensil above the heat to provide hot water for rinsing dishes and to keep dishes warm. If baking is to be done, the reflector oven should be positioned and used before cooking other foods.



Trench or pit fireplace

Later, start the food items which require less cooking time such as dried potatoes, rice, instant pudding, macaroni, or fish. As the various items are cooked and ready, they can be kept warm on the lid of the hot water utensil, on the fireplace rocks, or along the outer edge of the grate. For most campfire cooking, a small, even fire is better than a large one, requires less wood, is easier to work around, and is safer.

If good firewood is scarce in the immediate area of the camp, have a couple of the campers take an empty canoe around the shoreline to find a good supply. Shorelines that are open and exposed to the southwest and on higher ground are most apt to have suitable dead trees for this purpose because the stronger sunlight and moving air dry out the wood better.

Find the most level place possible to set up tents and clear away any stones, roots, and sharp twigs. If some slope is unavoidable, place bedrolls so the campers' heads are higher and feet are lower for more comfort. Frequently, surface bedrock prevents using stakes. If this is the case, tie or hold down the tent corners to or under available rocks.

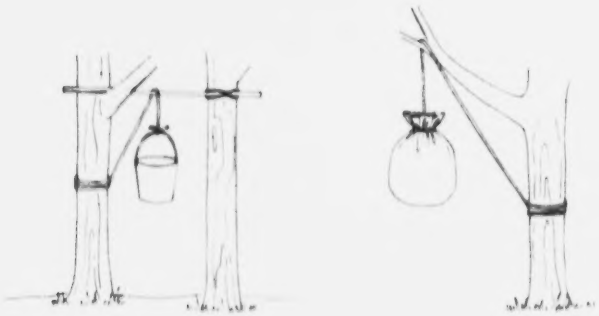
A Neat Camp Is Safer, More Comfortable

Even when attempting to travel "light," camping gear can litter a camping area and be in the way, get lost or ruined if it is not stowed away in protected places in a tent or designated area. Personal gear should be placed in each camper's tent or in a protected spot and not in the campfire area. The orderly placing of such things as gear, equipment, and clothing makes any campsite easier to get around in, especially after dark. A tidy camp adds greatly to the comfort and efficiency of camping. Young people, as well as many adults, can be careless with gear and belongings and the camp area can be a good place to learn the importance and necessity of orderliness.

Food items should never be kept in tents as they could attract bears, raccoons, or other pests. In bear country, food should be kept covered and out of their reach. Hanging a food pack by a rope from a tree limb well off the ground is one good way. If a bear does visit camp, it usually can be frightened away by beating on pots, pans, or the side of a canoe, or by using the emergency whistle.

Firewood and kindling should be protected from rain or dew at night by covering it with ponchos or placing it under a tarp or an upturned canoe. A Coleman-type lantern, though not a necessity, can be convenient, especially in spring and fall when the days are short. One flashlight per camper is a must and should be available around the campfire, cooking area, and accessible in each tent. Most campsites are apt to be rough or rocky in places and walking about in the dark without a light can cause a painful fall or stumble.

In wilderness areas without latrines, a fallen horizontal tree, a few feet above ground and well away from the campsite, provides a utilitarian yet pristine toilet. It should be smoothed of branch



How to keep food items safe from bears or other pests

stubble. Provide a plastic bag to keep the roll of toilet paper dry. With no knob to turn or chain to pull, each customer completes the mission by carefully covering his contribution with a good layer of leaves and duff from the nearby forest floor. In a semi-permanent campsite, cold ashes from the campfire will help neutralize any odors and discourage flies.

If the campsite is to be used for several days, the overturned canoe table can be replaced with an easily-built, chest-high pole table that will serve as a work-storage counter. Even though the weather may be clear and sunny on arrival, a tarp erected over the campfire area is advisable; weather can change quickly, especially in the north country.

Making a "Permanent" Campsite

If the fishing is good and the party has elected for a "permanent" campsite, make a live box with rocks in a foot or two of water, so that extra fish can be impounded and kept alive for the following day when luck may not be so good.

Designate one place along the wilderness shore, where deep water is within reach, to get water for cooking and drinking. Use another area for ablutions, washing clothes, and brushing teeth. Generally, river water should never be used for cooking or drinking. A supply of safe water should be brought along in gallon bottles or a large five- to eight-gallon plastic container. If the campsite is on a wilderness lake, during hot weather get cooler, cleaner water by canoeing out into deeper water then lowering a bucket ten or fifteen feet. Keep the drinking water cool by wrapping the pail with a wet cloth, keeping the cloth moist by pouring a cup or two of water over it every hour or so. The evaporation will keep the water cool. When doubtful about the purity and safety of any water, boil or treat with Halazone or a similar water purifier before using for cooking or drinking.

Tent flaps should be kept closed whether or not the tents are in use. This will keep out any insects or friendly little animals, and will

prevent the tent from collapsing if a sudden wind should come up while you are away. A few sprays of balsam, fir, fern, sweet gale, or pieces of reindeer moss scattered in front of the tent opening will serve as an entrance mat and help keep the tent floor clean. If mosquitoes are prevalent, spray the corners of the tent about dusk with an insect bomb then get out quickly and close the tent up as tightly as possible. By bedtime the fumes will have dissipated and there should be no mosquitoes or flies to spoil the night's sleep.

When breaking camp, any food remnants, containers, or paper should be burned or deeply buried. The campfire must be completely extinguished and **cold**—best accomplished by dousing with a bucket of water before leaving even if there is no evidence of a spark left. A rule of the woods is to leave the campsite cleaner than it was upon arrival, and leaving some firewood for the next camper is the mark of a true woodsman. It usually is best to pack bedrolls, gear, and food first, leaving tents and tarp to the last so they can dry out or afford protection in case of rain.

IX
Miscellaneous Tips

✔ Cloth or canvas work gloves can be very handy to provide warmth in spring or fall, and to protect your hands while making camp, building the fireplace, and cutting wood.

✔ A few clean, folded newspapers can be stuffed in with the food or utensil pack to add little weight or bulk and are useful as a tablecloth, providing a clean surface for food items and for starting fires or using as kindling.

✔ For trips that involve much portaging, boots or higher leather shoes are best because the trails are often rocky or muddy. Take a pair of sneakers or moccasins to use in camp. At the end of the day both feet and boots may be wet and the change to dry footwear, besides feeling great, will allow the boots to dry out.

✔ Summertime swimming at a campsite is great, but sandy beaches are infrequent in most areas, and many shorelines are steep, rocky, or muddy, making it difficult to get into the water. It may be tempting to go out and swim off the canoe. Do this with great care and never dive off the canoe, as it is apt to tip over or be pushed away from the diver and can quickly drift away even with a gentle wind or current. Never dive from a bluff into untested water; dropoffs are frequent. Strong swimmers should constantly watch young campers.

✔ Unless you have a very ample supply of cooking oil, Crisco or the like, save the bacon fat and let it solidify in foil or a clean container for later use.

✔ A Sierra cup (aluminum with hook handle) or similar vessel is handy to have on your belt or fastened to the canoe. One does get thirsty paddling and it is dangerous and nearly impossible to lean far enough over the canoe for a drink without upsetting or falling in.

✔ It is wise to carry some folded toilet paper in a pocket in case nature calls somewhere on the trail.

✔ Cleaning and fileting fish without a flat surface can be difficult. If there are no available flat rocks or anything similar that can be improvised for this purpose, place a canoe paddle solidly in a level position and use the blade. But do not use the bowman's favorite new expensive paddle or there may be mutiny in the crew!

✔ When the fishing is poor to so-so, try fishing with the white cartilaginous "something or other" from the throat of a Northern pike. It seems to work much better than artificial lures for walleyes or bass.

✔ When washing a greasy, crusted skillet or fry pan, pour in a half-inch of water, let it simmer over the fire for a few minutes, and then clean it quickly and easily with a spatula and scouring pad. Soaping the outside of pans before using will help to keep campfire carbon black to a minimum.

✔ Other things being equal, fishing is apt to be best below falls, rapids, or cascades, or where a river or flowage empties into a lake.

✔ In an emergency situation when help is needed, three smoking fires, three whistles, three gunshots, or waving a blanket or white garment to a plane or passing canoeist usually will bring help. In order to be seen and heard best, move to high ground so you are not hidden by trees or brush.

✔ If the blade of an axe becomes loose from the handle, jam the butt end against a rock, log, or stump to force the blade into the handle. Then immerse the blade end in the lake or river overnight. The lower end of the handle will take up water, expand, and temporarily correct the problem. Insert in the head an additional wedge at the earliest opportunity.

✔ Flashlights carried in packs can easily shift, accidentally switch on, and the batteries will wear out unnoticed—until you need the light. This can be prevented by temporarily reversing the top battery before packing.

✔ Air mattresses are much more comfortable to sleep on when they are not fully inflated. If about three-quarters inflated, they fit the body's contours better and are far more relaxing. Always have the inflation valve near your head at night so it is easier to add or reduce the pressure without getting up and moving about to search for it. On the morning that the party plans to break camp and move on, release the valve for deflation when you first get up. It will save time later. Retighten the valve when packing up. Do not lose it.

✔ When using an outboard motor with a sidearm on a conventional-type fifteen-foot to seventeen-foot canoe, a small, light one and one-half- to two-hp is adequate and safest. Anything larger or heavier can be tippy in rough water, and on a sharp turn can capsize the canoe. With two canoes properly fastened, catamaran-style with poles, a three- to five-hp motor is safe and works well.

✔ When a motor is needed to get over large lakes or traverses, but the route later will include several small lakes and portages, cache (hide) the motor and gas after the last long stretch—paddle and portage the rest of the way; then pick up the motor and gas on the return trip. Obviously, this plan is not feasible for a circular route or where motors are forbidden.

✔ To start a new fire or revive a dying one, besides using only dry, fine kindling, gently but forcefully blow on the ignition area to get the flame going again.

✔ In planning long trips over an extensive area, a map measurer is very useful. It is a small, inexpensive device with a little wheel which, when set to map scale, can be run over an irregular route to indicate fairly accurately the distance involved.

✔ Firewood for the campfire has to be whatever is available in the area, and most any dry, seasoned wood will burn well enough to produce heat and flame. In most of the Minnesota-Canadian border country and eastward, white cedar (thuja occidentalls) is commonly found along most waterways. When dry and seasoned, it splits easily, burns hot and well, and has a delightful aroma. It is the favorite of this writer. The common jack pine, spruce, balsam, birch, and poplar are all satisfactory if sound, dry, and not half-rotted. In the more southerly areas where hardwood and deciduous trees are common and conifers are scarce, hickory, oak, maple, ash, and birch all are good and considerably hotter and slower-burning than the softer evergreen conifers of the North Country.

✔ In traversing any fairly large lake, first orient the direction you should be heading with your map and compass. Then fix some distant landmark such as an island, point, high hill, or the like to help keep on course without having to watch map and compass constantly.

✔ In any semi-permanent camp, put up a rope clothesline between out-of-the-way trees to air and dry out any camp clothing, bags, or sleeping gear. Leave some pieces of white cloth fastened to the line so that no one will walk into it in the dark. Once aired and dried, stow the things in the tent if you plan to be away from the campsite for the day—rain squalls can come up quickly.

✔ If strong or gusty winds blow into the campfire area and make cooking difficult, place a canoe on its side or erect a tarp or poncho as a windbreak near the fire on the windward side.

✔ During prolonged wet or rainy weather, camp firewood can be dried by placing pieces over the grate and around the warm fireplace rocks where heat will dry off much of the moisture.

✔ For cooking in the rain without an overhead protective tarp, place a large griddle or skillet over the tops of any utensils or pans on the grate. This will catch most of the water and serve to protect the fire, as well as the food being prepared.

✔ Whenever a camping trip takes you into areas where poison ivy or poison oak is found, carry a bar of Fels Naptha or Brillo-type soap. Wash thoroughly with this—then use whatever lotion (calamine-type) that is provided in the first aid kit. Remember the traces of poison ivy or oak may still be on shoes, socks, and the cuff area of slacks or pant legs, so wipe them off with the brown soap whenever possible.

✔ When taking an outboard motor on a trip, take along an extra spark plug, a few shear pins, and the basic tools that may be needed.

✔ If traveling with a motor on water that has rocks or shoals, the stern man who is handling the motor must raise the prop the instant his bow man sees and signals rocks or bottom ahead to avoid a broken propeller.

✔ On expeditions in the far north, especially to the Arctic and tundra area, take headnets for protection against the almost ubiquitous and pesky mosquitoes and black flies. These headnets can be obtained where camping gear is sold or from stores that have beekeepers' supplies.

✔ If the party becomes lost or disoriented looking for a portage on a strange lake or waterway, do not just push ahead blindly. Retrace the route until you can verify your position with a map and compass and with recognizable landmarks—then proceed again in the proper direction.

✔ After each trip, while your memory is fresh, make a few notes as to items to add or delete for an even better trip next time.

✔ Particularly on any extensive trip, but even on a short weekend excursion, have someone act as treasurer to keep a record of all costs involved including the gas and meals enroute; then try to balance mileage of cars used, the cost of food and provisions, and allocate the general cost of the trip so that each person contributes an equal share of all the expenses. Each person should take care of his own individual license fees, and such items.

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Bruce Johnstone is a graduate of the University of Minnesota. In 1973 he retired from Northrup King Seed Company of Minneapolis, where he was employed for thirty-nine years as chief horticulturist. He served as a Navy lieutenant in the Pacific during World War II. He has written three books and numerous articles on flower and vegetable gardening. He was reared in Excelsior, MN., where he was an Eagle Scout; later he worked as a volunteer in Scout leadership, Big Brothers, and other youth organizations. He is a board member of Kids, Inc., an organization sponsoring a summer remedial reading and camp program in northern Minnesota for rural Minnesota youngsters. He has canoed and camped for forty years in Minnesota, Wisconsin, Ontario, and in the Arctic Barren Lands of Northwest Territories. Johnstone and his wife live in Excelsior.